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1 October 1985

# East Europe Report

ECONOMIC AND INDUSTRIAL AFFAIRS

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1 October 1985

## EAST EUROPE REPORT

### ECONOMIC AND INDUSTRIAL AFFAIRS

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INTERNATIONAL AFFAIRS

GDR FISH TRANSPORT VESSEL USED BY USSR

East Berlin SEEWIRTSCHAFT in German Vol 17, No 7, Jul 85 pp 321-329

[Article by Dipl Engr Hans-Joachim Taeger and Engr Adolf Sawade, VEB Mathias-Thesen Shipyard, Wismar: "9,350-Ton-Deadweight 'Kristall II'-Type Refrigerated Ship--An Advanced Development of the Series of Refrigerated Ship of the 'Polar' and 'Kristall I' Types"]

[Text] Large refrigerated fish carriers have been built by VEB Mathias-Thesen Shipyard, Wismar, to the order of V/O Sudoimport Foreign Trade Enterprise in Moscow for the Ministry of Fisheries of the USSR since 1970. The Mathias-Thesen Shipyard is the only foreign builder of such performance refrigerated vessels for the deep-sea fishing industry of the USSR. The "Kristall-II" reefers of 9,350 tons deadweight and 13,306 m<sup>3</sup> refrigerated hold capacity carry on the advances in the development proceeding from the "Polar"- and "Kristall-I"-class vessels. These ships were designed as a series of generations to meet the increasing requirements of the flotilla fishing in the CEMA member countries. They have been delivered to the USSR (40 ships), the Socialist Republic of Romania (4 ships) and the GDR (1 ship).

The "Kristall-II" vessels are intended for the carriage of refrigerated goods and for the replenishment of the fishing fleet. So they are arranged

- i. to take over at sea frozen fish products in cartons, lightly salted herrings in casks, canned fish in cartons, fishmeal in bags and fish oil;
- ii. to replenish the fishing vessels on the fishing grounds with diesel oil, heavy fuel, lubricating oil, fresh water, food, fishing gear and packaging materials; and
- iii. to take medical and cultural care of the crews.

The GDR shipbuilding industry participating in the "Inryb-prom 85" show will present the reefer "Penzhinskiy Zaliv"

(Yard No 232) at this International Fisheries Exhibition at Leningrad, 6-15 August 1985, the ship being the 40th fish carrier for delivery to V/O Sudoimport, Moscow.

The VEB Mathias-Thesen Shipyard, Wismar, has since 1970 under contract to V/O Sudoimport, Moscow, been building fishing refrigerated and transport vessels for the USSR Ministry of Fisheries. The shipyard is the only foreign producer of refrigerated ships of this size for the high-seas fisheries of the USSR. The series of refrigerated ships of the "Kristall-II" type (capacity 9,350 tons, cold storage volume 13,306 m<sup>3</sup>) represents a consistent continued development of the "Polar" and "Kristall" ship types by the VEB Mathias-Thesen Shipyard, Wismar. The latter are vessels which have proven themselves in rigorous use. This series, in the natural course of successive design generations, has been adapted to existing developments in the fishing flotillas of the CEMA countries; 40 have been delivered to the USSR, 4 to the Socialist Republic of Romania and 1 to the GDR.

On the basis of experience in construction and operation obtained during 15 years with 45 vessels and on the basis of regular exchange of scientific-technical information with the principal contract consignors there has resulted a total concept of the "Kristall-II" ship model which with its technical equipment and with its significant advances in utility has set the international standard for fishing fleets, especially

- i. in storage and packaging technique through process mechanization,
- ii. in the transport of refrigerated fish products and through the transport of supplies together with their containerizing at sea even under complicated weather conditions,
- iii. in the efficiency of the primary propulsion and the level of quality of production dynamics conjoined with improved transport efficiency,
- iv. in highest standard quality, working and living conditions, environment protection, reliability and work safety.

Since the first vessel of the "Kristall-II" series was placed in service on 30 April 1983 (KTS "Komsomolets Primorya") the operators and the shipbuilding yard have seen convincing evidence of the quality and practical features of this product. The ship meets all the specifications of the consignors and is designed to meet a broad spectrum of requirements as a result of scientific-technical cooperation with the ships' companies, the workers at the fisheries' bases and specialists in the Ministry of Fisheries of the USSR (especially in the Leningrad Giprorybflot Institute). There has thus arisen a striking achievement of socialist integration in the area of fisheries.

The quality grade "Q" has been assigned to the "Kristall-II" refrigerated ship by the Office of Standardization, Measurement and Product Testing of the GDR. At the 1985 Leipzig Spring Fair this ship type received a gold medal. With the "Penzhinskiy Zaliv" refrigerated ship (Yard No 232), which is the 45th item in the "Polar-Kristall" series, GDR shipbuilding is being represented at

the International Fisheries Exhibition "Inrybprom 85" from 6 to 15 August 1985 in Leningrad. At the same time this is the 40th refrigerated ship to be supplied to the principal contract consignee V/O Sudoimport, Moscow.

## 1. Ship Design

### 1.1. Vessel Type and Intended Application

The ship is an open-deck type with short forecastle. The deckhouse, situated aft and having five decks, contains the living, working and service spaces. On the upper deck between the loading hatches there are three deckhouses which are occupied by the loading pylons, loading winches and winch tracks. In addition, they house, inter alia, the machine room for the cold storage refrigeration equipment, the emergency diesel room as well as entrances into the storage rooms. The vessel has four cold storage rooms which are subdivided by an intermediate deck and a grating deck. There are, besides, two fishmeal storage rooms and two fish oil tanks. The machinery is housed aft. Consistently with its original purpose the vessel is laid out for the transport of refrigerated cargo and the transport of supplies. It is equipped

i. to receive at sea from fishing ships and processing ships of the most varied types frozen fish products in cartons, lightly salted herrings in barrels, preserved food in cartons, fishmeal in bags and fish oil and to transport these cargoes to their destination ports;

ii. to deliver diesel fuel, heavy oil, lubricating oil, drinking water, provisions, fishing equipment and packaging material to the fishing ships at the catch sites and also to administer to the crews medically and in cultural areas.

### 1.2. Cruising Area, Equipment and Supplies Duration

The range of action amounts to 12,300 nautical miles. The range of travel is unlimited, corresponding to Class 1 and includes tropical zones. The hull permits travel through broken ice.

The supplies for use by the machines and systems at 90-percent nominal output of the primary machinery are designed for a period of 30 days. This corresponds to the planned time required for the journey to the catching site and the subsequent trip to the ship's destination port. The requirement for heavy oil, diesel fuel and lubricating oils for operation of the auxiliary machines and of the auxiliary boiler is reckoned on the assumption of a total travel time of 120 days.

The ship's 309-m<sup>3</sup> freshwater supply can be supplemented by means of the on-board evaporative equipment for the ship's own use and also for supply to other craft. The distillate can be made potable by mineralization and sterilization.

For distribution to fishing ships requiring supplies it is possible to carry along 895 tons of heavy oil, 585 tons of diesel fuel and 22 tons of lubricating oil.



### 1.3. Class and Regulations

The ship has been built in accordance with the regulations of the USSR Registry and under its supervision; the ship's class is KM \* L 1 I A 2. The cold storage refrigerating equipment has the refrigerator classification X \* of the USSR Registry.

Design, equipment and provisioning of the vessel are consistent with the following international conventions and regulations:

- i. International Agreement on the Protection of Human Life at Sea, 1974 Edition (International Ship Safety Treaty, 1974),
- ii. Regulations for the Equipment of Ocean Vessels in Accordance With International Agreement, 1977 Edition--USSR Registry,
- iii. Regulations Governing the Prevention of Pollution by Shipping, 1979 Edition--USSR Registry,
- iv. Regulations Governing the Freeboard of Ocean Vessels, 1977 Edition--USSR Registry,
- v. Regulations in the USSR Registry, 1977 Edition, Regulations for the Classification and Construction of Ocean Vessels,
- vi. Regulations Respecting Lifting Equipment on Ocean Vessels, 1977 Edition--USSR Registry,
- vii. Regulations and Instructions Regarding the Passage and Dimensioning of Ocean Vessels for the Suez Canal and the Panama Canal, Effective as of the Date of Treaty Signature,
- viii. International Regulations Governing Ship Dimensions; Convention Respecting a Uniform System of Ship Dimensioning Dated 15 January 1969 (IMCO);
- ix. Health Regulations of the USSR, 1964 Edition. For sound level limitations the recognized standards of the CEMA are applicable;
- x. Health Standards and Regulations Affecting Work With Sources of Electromagnetic Fields of High, Ultrahigh and Maximum Frequencies (SN 8488-70);
- xi. Agreement Respecting International Regulations for the Prevention of Collisions at Sea, 1972 Edition;
- xii. the "General Work Safety Requirements in the Design and Construction of Ships," Item 1.3 of the Work Safety Regulations on Vessels of the USSR Fishing Fleet, 1973 Edition.



#### 1.4. Primary Dimensions/Primary Data

Length overall	152.14 m
Length between verticals	142.00 m
Bulkhead breadth	22.20 m
Lateral height to upper deck	13.60 m
Greatest mean draft	8.02 m
Capacity at maximum mean draft of 8.02 m	9,350 tons
Cargo at a stowage factor of 1.73 m <sup>3</sup> /t in the storage rooms I through IV	7,461 tons
Volume of cold storage rooms	13,306 m <sup>3</sup>
Volume of fishmeal storage rooms	1,351 m <sup>3</sup>
Volume of fish oil storage tank	198 m <sup>3</sup>
Speed at mean draft of 8.02 m and 90% nominal power	17.40 kn
Propulsive power	7,600 kw
Range of action	12,300 sea miles
Crew	71 persons
Size	12,383 GT*
Installed electrical energy	4x735 kw/763 kva 1/140 kw/155 kva
Installed steam generators	1x6,300 kg/hr 1x2,050 kg/hr
Installed refrigeration energy for holds	5x392,303 kJ/hr
Evaporating equipment	2x40 tons/24 hr
Ship's refuse incinerator	75/50 kg/hr
Wastewater treatment equipment	5 m <sup>3</sup> /hr
Bilge water deoiling equipment	10 m <sup>3</sup> /hr
Tank volumes:	
Diesel fuels	741 m <sup>3</sup>
Heavy oil (max)	4,327 m <sup>3</sup>
Lubricating oil/recovered oil	180 m <sup>3</sup>
Cylinder lubricating oil	23 m <sup>3</sup>
Boiler feedwater	116 m <sup>3</sup>
Drinking water	309 m <sup>3</sup>
Sludge	16 m <sup>3</sup>
Fish oil	198 m <sup>3</sup>
Cooling water	19 m <sup>3</sup>

\* Gross tonnage[?].

## 2. Marine Architectural Section

### 2.1. Ship's Hull

Eight watertight bulkheads divide the ship into seven main subdivisions besides forepeak and afterpeak. With regard to leakproofness the ship is designed as a double-compartment ship. It is completely welded (about 67 per cent of the welding being done by mechanized and semiautomatic processes).

The hull has a sharply flared stem which below the waterline has the shape of an icebreaker stem. The method used to provide the hull with ice reinforcement

takes particularly into account the forces arising from contact with the fishing ships when the catch is being taken aboard. An improved trim attitude makes the ship proof against slamming.

With the exception of foreship and aftship the upper deck is designed in longitudinal frame construction; all other bracing members are designed in transverse frame construction. The double bottoms, the ship ends and for the most part also the deckhouses are constructed in volume sections, the remaining portions in surface sections.

Design and construction of the hull have been carried out with emphasis being placed upon shipyard experience and upon the special conditions under which the ship will operate. Together with the new propulsion system design and a new specially adapted propeller the ship's lines throughout the entire aftship have been designed and optimized in the interest of providing good flow toward the propeller and greater propeller hydrodynamic efficiency. The ship has a stern bulge. The vibratory resonance of the propeller was successfully matched to the vibratory behavior of the hull.

## 2.2. Marine Architectural Equipment and Containerizing Equipment

The equipment of the ship is consistent with its task assignment which is to deliver and to transmit cargo and supplies while in the open sea. To this end on the basis of experience acquired by the Soviet operators there has been developed and employed largely mechanized coupled loading equipment which is well-suited to the difficult and variable demands encountered in reception/delivery operations in the open sea. Through extensive mechanization of the loading equipment and by operating the winches with mobility from four heatable control stations improved working conditions have been created. The loading can take place via all four hatches depending upon the size and the number of delivery devices. Frozen items are transferred on pallets. In a work cycle of 24 hours the capacity amounts to as much as 250 tons of loaded cargo per hatch. The loading setup permits simultaneous reception of cargo from four ships. In the case of small ships the transfer can be accomplished using on-board coupled loading equipment. In the case of larger ships it is possible to carry out a coupling operation between the adjacent ship and the home ship. For this loading operation the ship possesses special large-volume rubber fenders. The loading equipment includes:

- 5 free-bearing loading posts
- 1 5 t/14 m crane
- 6 5 t/18 m cranes
- 2 5/10 t/18 m cranes

Each of the nine cranes is equipped with a 6.3-/3 t loading winch and an electrically driven 5 t suspension winch as well as corresponding mechanized "preventer" winches and deck tackle winches. The clearance dimensions of the hatches on the upper deck are 6 m x 4 m.

On the upper deck garages are available for forklifts. Charging equipment for forklift batteries are installed. Within the holds the cargo is transported

on pneumatic-tired electric forklifts. All hatch covers are actuated hydraulically. The hatches I to IV on the upper deck are closed by insulated folding hatch covers; on the second deck by insulated hatch covers in flush-deck design and on the third deck in flush-deck girder grillage design.

The ship has a semifloating rudder in welded construction. An ice spur provides protection against ice damage. The rudder is driven by an electrohydraulic four-cylinder plunger-piston machine and has a rudder turning moment of 400 kN·m. The electrical remote control is carried out from the bridge, optionally through a self-steering device or by hand. On the forecastle deck there are arranged on the port side and on the starboard side anchor windlasses having a nominal tension of 98 kN at the capstan head. Four 50-kN windlasses serve various nautical purposes. The arrangement of the mooring posts, hawses and guide pulleys is in accord with requirements for passage through the Panama Canal. Rotary mooring posts are available in addition to fixed posts.

Rescue equipment consists of two rescue motorboats in closed construction for 77 persons each and two automatically inflatable rubber rafts for 20 persons as well as life belts and life jackets.

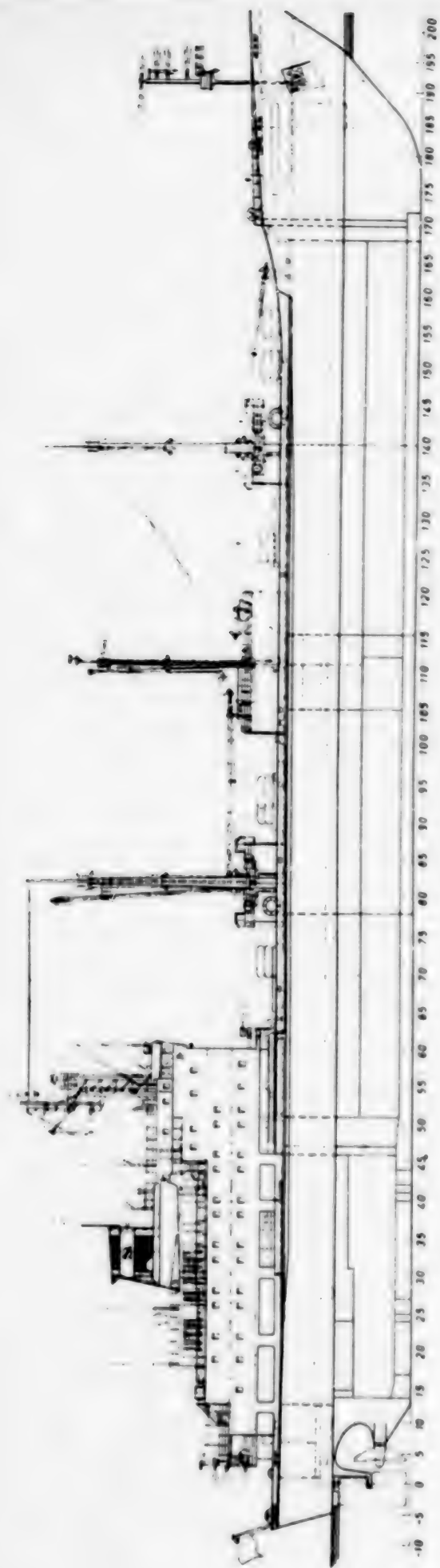
### 2.3. Insulation in the Holds

The four deep-freeze holds with a total volume of 13,300 m<sup>3</sup> are subdivided by grating decks. The insulation of the lateral walls and the decks consists of a combination of mineral wool batting and PIC foam. The double flooring is insulated with polystyrol foam and mineral wool. A floor covering in the form of a sheet steel shell is built in which is pulled up at the external skin and at the bulkheads at intervals of 1 meter. Walls and ceilings are clad with sheet aluminum.

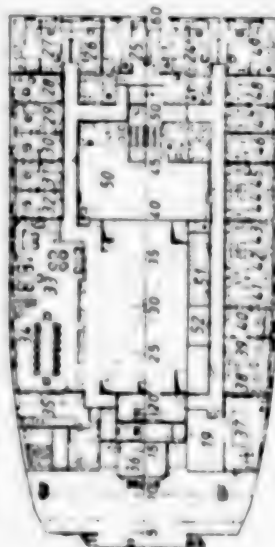
### 2.4. Furnishings

The arrangement and furnishing of the living quarters, leisure rooms and service rooms for 71 persons correspond to the needs of the crew at work and at leisure and also meet the need for cultural social and medical ministrations. The crew is housed in comfortable one- and two-man cabins. Space is divided up in such a way as to allow for its functional assignment in relation to the work of the crew. There has resulted a consistent division between noisy zones and the living and service quarters. All living quarters and social rooms are designed in accordance with modern ideas, fully air conditioned and offer thorough functionality and comfort. Social rooms include: officers' salon and officers' mess, captain's salon, crew's mess, Red Corner, reading room and day room. In addition, there is a movie theater, an archive and a library. For the athletic activity of the crew there are available a swimming pool, a gymnasium and a sauna.

The vessel possesses a spacious medical complex equipped with all requisite medical equipment, consisting of an operating room, X-ray laboratory, outpatient department with dental station, wards and a separate isolation ward having its own bath and toilet. This complex also serves the crews of other ships at the fishing site.



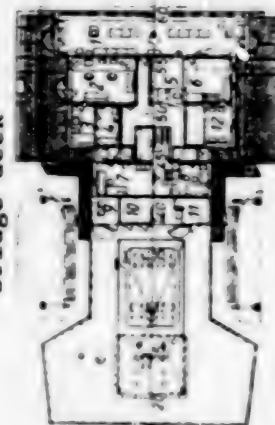
Second superstructure deck



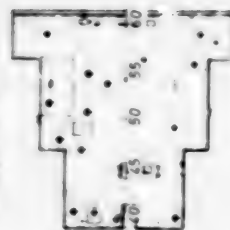
Boat deck



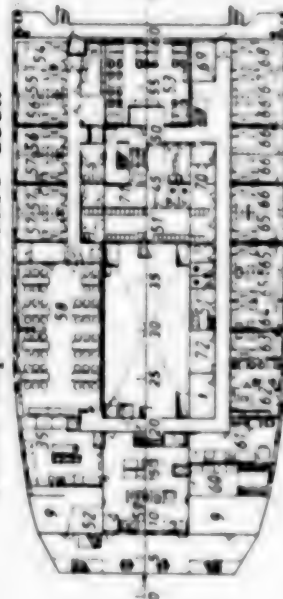
Bridge deck



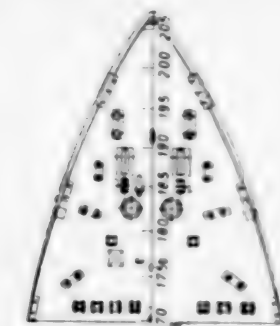
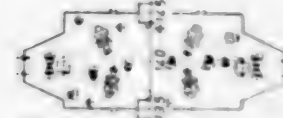
Upper deck



First superstructure deck

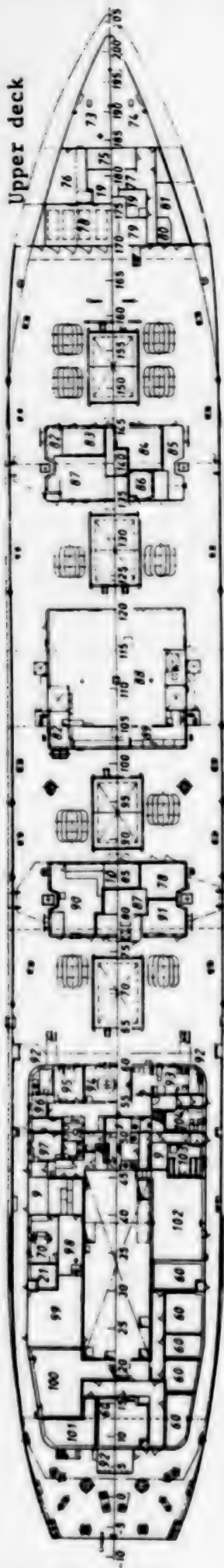


Winch and forecastle deck

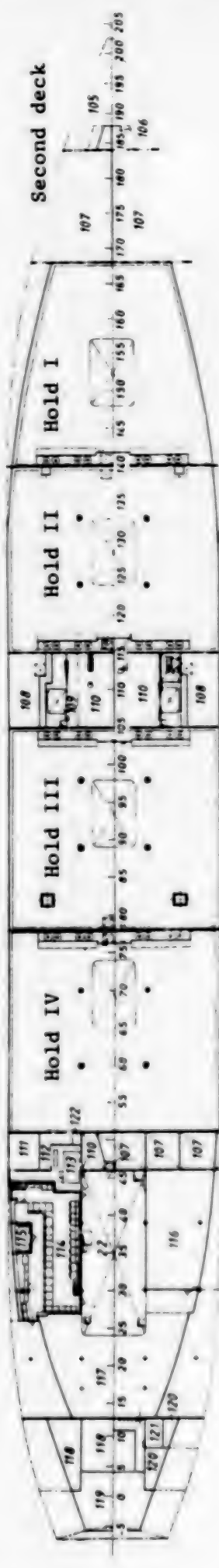




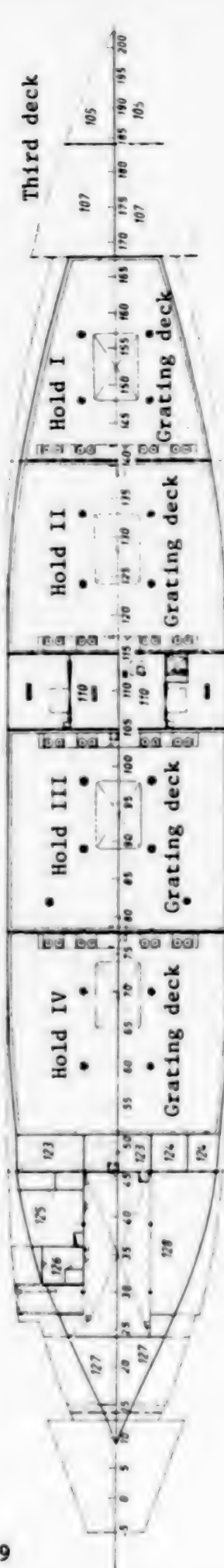
# Upper deck



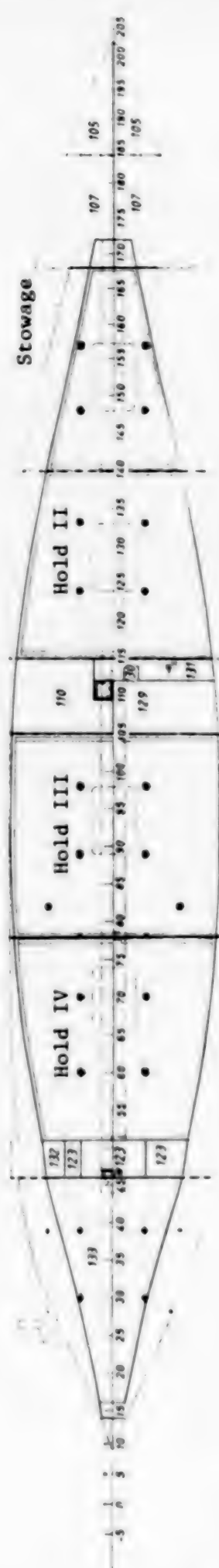
# Second deck



# Third deck



# Stowage





Legend:

- |  |  |
|--|--|
| 1. Bridge  | 47. Fourth officer   |
| 2. Radio room                                      | 48. Fourth engineer  |
| 3. Telegraph room                                  | 49. Refrigeration machine engineer                         |
| 4. Transmitter room                                | 50. Air conditioning                                       |
| 5. Radar room                                      | 51. Dressing room  |
| 6. Map room  | 52. Fire extinguishing equipment                           |
| 7. Radio officer                                   | 53. Salon  |
| 8. Pilot   | 54. Chief cook   |
| 9. Ventilation room                                | 55. Two boiler mechanics                                   |
| 10. Storage batteries                              | 56. Two machinists   |
| 11. Transformer                                    | 57. Two supervising machinists                             |
| 12. Equipment room                                 | 58. Crew's mess  |
| 13. Captain  | 59. Galley   |
| 14. First officer                                  | 60. Provisions   |
| 15. Chief engineer                                 | 61. Bakery   |
| 16. Captain's aides                                | 62. Library/reading room                                   |
| 17. Second officer                                 | 63. One kitchen helper/one steward                         |
| 18. Fishing master                                 | 64. Cook/baker   |
| 19. Storage  | 65. Two sailors, 2d class                                  |
| 20. Brine adjustment tank                          | 66. Two sailors, 1st class                                 |
| 21. Drying room                                    | 67. Two machine maintenance helpers                        |
| 22. Machine shaft                                  | 68. Boatman  |
| 23. Rescue motorboat                               | 69. Telephone exchange                                     |
| 24. Chief electrical engineer                      | 70. Ironing room   |
| 25. Third officer                                  | 71. Gyrocompass room                                       |
| 26. Second engineer                                | 72. Hydraulics room  |
| 27. Electrical engineer for<br>automated equipment | 73. Boatman's hold   |
| 28. Inspector                                      | 74. Carpenter's hold                                       |
| 29. Third engineer                                 | 75. Switching room   |
| 30. Loading officer                                | 76. Hawser hold  |
| 31. Radioman                                       | 77. Sales room   |
| 32. Physician                                      | 78. Garages  |
| 33. Officers' salon                                | 79. Loading station  |
| 34. Officers' mess                                 | 80. Lamp hold  |
| 35. Pantry   | 81. Dye hold   |
| 36. Swimming pool                                  | 82. Workshop   |
| 37. Gymnasium                                      | 83. O <sub>2</sub> and acetylene room                      |
| 38. Two electricians                               | 84. Refrigerant storage                                    |
| 39. Two supervising electricians                   | 85. Damage control devices                                 |
| 40. Two supervising refrigeration<br>machinists    | 86. Welding shop   |
| 41. Milling machine operator and<br>welder         | 87. Electrical switching devices                           |
| 42. Sailor   | 88. Machine room and hold air condi-<br>tioning facilities |
| 43. Two meteorologists                             | 89. Control room   |
| 44. Two nurses                                     | 90. Emergency diesel room                                  |
| 45. Chambermaid                                    | 91. Liquid gas station                                     |
| 46. Two stewardesses                               | 92. Transfer station                                       |
|  | 93. Ambulance  |
|  | 94. Operating room   |

## Legend (continued)

- |  |  |
|--|--|
| 95. Sick ward  | 113. Sludge processing                               |
| 96. Laboratory   | 114. Machine control room                            |
| 97. Isolation station  | 115. Transformer room                                |
| 98. Laundry  | 116. Auxiliary boiler room                           |
| 99. Trash incinerator  | 117. Auxiliary diesel deck                           |
| 100. Dry provisions  | 118. Drinking water                                  |
| 101. Beverage hold   | 119. Rudder machine room                             |
| 102. Machine room for provisions<br>refrigeration equipment and<br>compact air conditioning<br>equipment | 120. Engine oil                                      |
| 103. Day room  | 121. Cylinder oil                                    |
| 104. Office  | 122. Dirty water                                     |
| 105. Ballast water   | 123. Heavy oil or dirty water                        |
| 106. Chain stowage box   | 124. Heavy oil settling tank                         |
| 107. Heavy oil   | 125. Machine shop/storage/carburetor<br>testing room |
| 108. Fish oil  | 126. Electrical workshop/storage/test-<br>ing room   |
| 109. Cable conduit   | 127. Boiler feedwater                                |
| 110. Heavy oil, diesel oil or<br>fishmeal  | 128. Refrigeration deck                              |
| 111. Diesel oil settling tank  | 129. Diesel oil                                      |
| 112. Sludge tank   | 130. Speedometer/echo fathometer                     |
|  | 131. Pump room                                       |
|  | 132. Bilge water                                     |
|  | 133. Machine room                                    |

The measures taken for fire prevention correspond to the regulations of the "International Agreement on the Protection of Human Life at Sea, London, 1974." In consequence nonflammable materials were used for the most part. For walls and interior planking there were employed 50-mm-thick wall panels in sandwich construction with mineral wool core covered on both sides with laminated sheet steel decorated with an imitation wood finish. The ceilings in the living quarters and service rooms as well as in the corridors also consisted of an insulated sheet metal system.

In order to meet the required degree of noise abatement special measures of acoustic protection were introduced. The living space textiles are in large part made of glass fibers. For the needs of the crew there are available an excellent galley, pantries, daily provision room, bakery and a complete laundry section with laundry, drying room, ironing room and room for clean and dirty laundry. For the provisions there are available separate refrigeration rooms for eggs and milk products, fats, fish, meat, beverages, vegetables and potatoes, wet and dry provisions. In addition, there are various lockers, storerooms, a mail room, a shop for making purchases, warehouses, workshops and storage rooms for various purposes.

### 3. Features Relating to Machinery

The machinery is located aft. The demands of the operators for increased efficiency, concentration of power, high reliability with long service life, the use of heavy oils of lower quality, surveillance-free operation with full

automation of the process systems, an autonomous safety system and good conditions for maintenance and repair as well as interchangeability of parts with GDR products on other fishing vessels delivered to the USSR--all of these have been taken into account.

### 3.1. Primary Propulsion System

The primary engine is a two-cycle cross-head diesel engine with supercharging and two separate precompressors for turbosuperchargers, Model K5SZ 70/125 BL built by the Rostock VEB Diesel Engine Works (MAN license), having a nominal power of 7,600 kw and a nominal rotational speed of 130 rpm. The engine is directly linked with the shaft line and the four-blade fixed-pitch propeller.

### 3.2. Auxiliary Machines

For the electrical power supply there are available four six-cylinder four-cycle plunging piston diesel engines with exhaust turbosuperchargers of type 6 NVD 48 A-2 having a power output of 735 kw each at 428 rpm. These were manufactured by the Magdeburg VEB SKL. Each diesel engine is coupled directly to an AC constant-voltage generator, 763 kVA, 380 V, 50 Hz, Model DF 1512-14 manufactured by the Dresden/Niedersedlitz VEB Saxony Plant, and mounted on a common base. Remote starting devices for the diesel generators have been provided in the machine control room (MKR). A preselected auxiliary diesel turns on automatically after a blackout. For emergency power supply there is available an emergency generator having an output power of 155 kVA.

To supply the ship with heating and industrial steam there has been installed an oil-fired single-drum water-tube boiler with air heater and automated regulating and surveillance equipment, Model ESH 6.3, steam output 6,300 kg/hr, operating pressure 500 kPa. The boiler may be switched over from automated mode to manual mode (emergency operation) and conversely and may be shut down remotely from the MKR. In order to make use of the heat energy there is installed in the exhaust line of the primary engine an exhaust boiler/forced circulation boiler with tubular coils, Model AKS 2.2-24, having an operating pressure up to 650 kPa with a steam production of 2,150 kg/hr at 90-percent machine output. Two evaporators, Model SVA 40, have a nominal output of 40 tons/hr each. Both installations can be optionally heated either with engine cooling water or with steam depending upon the form of heat energy which happens to be available. The ship is equipped with fire-extinguishing apparatus employing water, employing liquid gas and employing steam. The water supply consists of three separately laid out piping systems for drinking water, hot water and sanitary seawater.

### 3.3. Proenvironmental Features

In compliance with the specifications of the International Agreement on the Prevention of Ocean Pollution by Ships, dated 1973, the following facilities are available:

1. ship's garbage incinerator, Model SAVA 75/50 with used oil combustion, combustion capacity 75 kg/hr solid waste or 50 kg/hr oil sludge,

- ii. ship's wastewater treatment plant, Model SABA 50 using biological reduction,
- iii. bilge water deoiling plant with after-filter for residual oil content not exceeding 15 ppm, capacity 10 m<sup>3</sup>/hr,
- iv. equipment and design features aimed at preventing entrance into the ocean of liquid mineral materials during the reception or transfer processes.

### 3.4. Refrigeration

The hold refrigeration facility operates with five screw-compressors of 392,303 kJ/hr each. The refrigerant is R 22, which is directly evaporated. The individual hold sections can be handled independently and automatically by means of electronic controls in such a way as to maintain room temperatures ranging from -8° C to -30° C. Manual operation is possible. The facility has automatic defrosting and a sloughing device linked to the main power supply. The power of the compressors can be regulated stepwise from 100 percent to 10 percent of nominal power. The refrigeration machinery room is located on the upper deck. The provisions refrigerator is in the deckhouse on the upper deck. This refrigerator consists of two compressors and wall air coolers.

There are two central high-speed air-conditioning installations for supplying living quarters, social rooms and service rooms with conditioned air. The air processing takes place in compact air-conditioning devices having built-in refrigerators. An additional refrigerating facility is available to supply the air-purifying systems in the galley and in the machine room.

## 4. Electrical Engineering

### 4.1. Electrical Power Generation and Distribution

The energy source consists of four constant-voltage generators 3 x 380 V, 50 Hz with thyristor units of 763 kVA each, and also an emergency generator of 155 kVA. All important power consumers have double power inputs, one automatic and the other manual and they are under functional surveillance. All power supplies and drives for the electrical power circuitry of the primary machine and of the diesel generators are in standby operation. Automation systems and safety systems switch over without interruption to battery operation.

The equipment is protected against short circuits and permits limited operation even in damage situations. During temporary overloads unimportant consumers are switched out in two stages. A blackout automated system prevents total power failure. The protective system is electronically constructed. For special facilities in addition to the AC emergency power supply there are several battery power supplies. The main electrical switchboard is set up fore and aft in the MKR. The onshore power supply connection is designed for maximum nominal current of 400 A and 3 x 380 V, 50 Hz.



#### 4.2. Automation

The range of automation is of a high standard, has high reliability, meets all specifications and corresponds to all available experience in relation to reliability and to an increasing degree exploits all the advantages of electronics and microelectronics. The extent and design of the automation are in accord with the specifications of the USSR Registry for the automation class Mark A 2, i.e., surveillance-free with crew in the machine control room.

All maneuvers of the primary propulsion system can be controlled or regulated either from the machine control room or through the AFD III/2 remote operating automatic system which is run from the bridge.

For surveillance of the machine installations there is for each one a control point in the noise-abated and air-conditioned machine control room and in the control room of the hold refrigerating facility, where all important functions and measured values are controllable and observable. A machine surveillance installation possessing both analog and digital measurement acquisition and limit-value signaling, a control system, a remote control system, a regulating system and an autonomous safety system serve to provide safe and uninterrupted operation of all equipment, circuits and machines.

#### 4.3. Radio, Navigation and Information Equipment

For piloting the ship there are available all requisite facilities for radio, navigation, route surveillance, information and signal transmission; e.g., primary and emergency radio equipment, automated alarm receivers, telephonic/automatic alarm receivers, automatic distress call equipment, portable rescue boat radio station, ultrashortwave voice radio equipment, radio direction-finding equipment, radar equipment, navigation equipment, gyrocompass equipment, echo fathometer, marine odometer, rudder position indicator and ship's engine shaft rpm indicator, fire alarm, communications and operations telephone equipment, fog signaling equipment, hydrometeorological equipment. These appointments are completed by a radio program broadcasting facility, an intercom system and cabin radio installation.

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8008

CSO: 2300/488



BULGARIA

COMMENT ON ECONOMIC, SCIENTIFIC COOPERATION WITH USSR

Sofia IKONOMICHESKI ZHIVOT in Bulgarian 3 Jul 85 p 8

[Article by Candidate of Economic Sciences Ivan Todorov: "For Peaceful Toil and Prosperity"]

[Text] The date 7 June 1985 marks a new remarkable peak in our most recent history and the chronicles of the sacred and pure Bulgarian-Soviet friendship. On that day, Comrade Todor Zhivkov, BCP Central Committee general secretary and chairman of the State Council of the Bulgarian People's Republic paid a friendly working visit to the Soviet Union. It was Bulgarian day in Moscow, in the Kremlin, to be remembered by all for the fruitful discussions which took place between our first party and state leader and Comrade Mikhail Gorbachev, CPSU Secretary General, and the presentation to Comrade Todor Zhivkov of the highest Soviet decoration, the Order of Lenin, and the signing by the two leaders of the Long-Term Program for the Development of Economic and Scientific and Technical Cooperation between Bulgaria and the USSR for the Period Through the Year 2000.

This program is now in our hands. We keep reading and rereading it, for to all of us it is a historical document of profound vital significance in the further development of the inviolable friendship and cooperation between our two parties, countries and peoples, a document of their unity of thought and dynamic unity of action in the name of peace, socialism and life.

In discussing the fruitful all-round cooperation between our two countries, we must emphasize the high degree of reciprocal satisfaction of needs. The USSR is today the biggest foreign partner of the Bulgarian People's Republic. It accounts for 57 percent of our entire foreign trade. For example, Bulgaria meets 75 percent of Soviet requirements for electric and motor cars, and 46 percent of electric hoists. More than 60 percent of our machine and equipment exports and 80 percent of our electronic products are sold in the Soviet Union. At the same time, we receive from the USSR 57 percent of the machines and equipment we need, 98 percent of the additional coal and electric power we require, etc. All in all, trade between our countries has increased from 2.4 billion foreign exchange leva in 1970 to 14.8 billion in 1984, as a result of which Bulgaria emerged in third place among the foreign trade partners of the USSR.

Thanks to the aid we received from the land of the Soviets, our country has already acquired a large-scale industry and an energy, metallurgical, petroleum refining and chemical material production base, which is ensuring the steady progress of our economy. We are pointing out these facts and figures to emphasize the tremendous prospects for our reciprocal cooperation for the balance of this century, based on the long-term program. "The achieved results and the prospects for the expansion of Bulgarian-Soviet cooperation," the long-term program stipulates, "are of great importance in resolving the strategic problems of building the material and technical base of developed socialist society and communism."

The program stipulates that in order to attain the main objective of our cooperation--upgrading the prosperity and ensuring the fuller satisfaction of the needs of our peoples, the two countries will concentrate their efforts on the further intensification of the Bulgarian and Soviet national economies. In this connection, reciprocal cooperation is concentrating on the all-round increase in social labor productivity on the basis of the acceleration of scientific and technical progress, improvement of the international socialist division of labor and production cooperation.

It is a question of a specific unity of action aimed at strengthening the material base of the national economy through the extensive use of the latest high-efficiency technologies, machines, equipment and construction and other materials, the fullest possible utilization of production capacities, the conservation of material and labor resources, quality improvements, etc. The program assigns an essential role to capital investments and improvements in the structure of the national economy by developing low energy- and material-intensive production facilities.

The all-round use and application of the latest achievements of scientific and technical progress is considered by both countries a key factor in the implementation of the long term program. The coordinated policy in this most dynamic area will be directed toward structure-shaping priority trends and production areas, such as electronics, comprehensive mechanization, new types of materials and technologies and biotechnologies. Particular attention will be paid to microelectronics. Research will be concentrated on developing the production of microelectronic components, instruments and systems with high-level integration. We are justified in saying that electronics, computers and instrument manufacturing are the true catalysts for accelerated development and that machine building is the main trend in this development, aimed at retooling the national economy with most advanced technology. The joint development and application of high-efficiency industrial technologies in agriculture and biotechnology and modern genetic, physiological, biochemical, molecular and other methods will bring about revolutionary changes in the production of goods of plant and animal origin.

It would be difficult to cover all facets of future reciprocal activities. However, we cannot fail to point out that all trends, objectives and tasks included in the long-range program for Bulgarian-Soviet cooperation will take place through the periodical coordination of the most important trends of economic and scientific and technical policy. In this connection, direct ties and interaction between planning and economic organizations will be

strengthened in the areas of science and technology and material production. Sectorial programs for production specialization and cooperation for the period of the next five-year plan and through the year 2000 will be formulated and coordinated by the individual ministries and departments on the basis of the long-term program.

As we may see, the latest long-term program is a summation and development of previous cooperation programs, agreements and protocols. It truly opens a new and higher stage in the overall development of Bulgarian-Soviet relations in economic and scientific and technical cooperation. It is a new manifestation of the jointly formulated and coordinated strategy. It is a historical document which reflects the level already reached, the growing possibilities and the high objectives set by our fraternal parties, countries and peoples under contemporary conditions, for the sake of the powerful development of the production forces of real socialism and their closest possible connection with the leading achievements of scientific and technical progress. It is a document which confirms the vitality of our common course of comprehensive cooperation and rapprochement between Bulgaria and the USSR, based on the principles of Marxism-Leninism and socialist internationalism in action. "This is the fifth decade," Comrade Todor Zhivkov emphasized, "that the Bulgarian people are converting into real constructive accomplishments the ideas and principles of Marxism-Leninism. Socialist Bulgaria extensively relies on fruitful cooperation and interaction with the members of the socialist community and, above all, the party and homeland of Lenin and the fraternal Soviet people."

This is a long-term program for the present and the future. It is a program involving no phantasy whatsoever, realistically based on possibilities, dreams and hopes. Such a program can be formulated and initiated only by leaders and peoples whose intentions are peaceful, who think about life, believe in it and will defend it with all available means and strength.

This is a program of two parties, two socialist states and two fraternal peoples, whose hearts are beating in unison and in whose veins flows the same fraternal blood.

This is a program brightly illumined by our eternally vital Marxist-Leninist theory, which has withstood the trials of history, daringly aimed at the future by the political leaders of our peoples--the BCP and the CPSU--who are leading the peoples to the conquest of new heights in the immediate future.

That is why those who reread the long-term program cannot fail to see the ideological convictions, profound humanism, optimism and unshakable faith in the communist future of our countries and peoples that it embodies.

Our peoples are countering the various short- and long-term armament and rearmament programs of bellicose imperialism and its efforts to involve mankind in various earth and "star" wars with their long-term program for peaceful toil and people's well-being. Could anything be better?

5003  
CSO: 2200/168

1 October 1985

## BULGARIA

## VARIETY OF WHITE-COLLAR CRIMES DESCRIBED

Sofia ANTENI in Bulgarian 17 Jul 85 pp 1, 8, 9

[Report on a discussion on the protection of socialist property: "Apples From Someone Else's Orchard"]

[Text] "Cases of circumventing and violating laws, thefts and abuses are all manifestations of the so-called 'small truth.' Unless we struggle against it, it can reduce the effect of even the best-organized ideological work and hinder the education of the people." -- Todor Zhivkov

Socialist property is the base on which we are constructing our economic, social and political system. That is why its comprehensive protection is a prime obligation for all. Thousands of working people are conscientiously at work to increase the social wealth. Innumerable examples may be cited of proper and conscientious attitudes toward the people's property. However, there also are those who, carried away by their desire to acquire material goods easily, illegally appropriate public funds. Others show criminal negligence toward state property assigned to them or else misuse it.

What other dynamics of the crime of appropriating public funds? What are the violations of the law in the national economy, the consequences of which cause the greatest harm? What are the main ways in which such violations are manifested?

Such were the introductory questions with which the discussion on the protection of socialist property was started? Participating in the discussion were Colonel Engineer Ivan Dimov, chief of the Economic Administration, People's Militia Directorate, Colonel Vasil Mikhov, Colonel Ivan Tsonev and Colonel Boris Madolev, respectively department chiefs at the administration.

## Increasing Exposures

Engineer Ivan Dimov: We are concerned by the fact that despite the measures which are being taken, encroachments on socialist property remain. The protection of this property is a particularly topical problem now, as a result of the losses caused by adverse natural conditions, our entire public, all working people are called upon to ensure the implementation of the



compensation program. The number of exposed economic crimes in all material production sectors has increased significantly in recent years. Violations have been established recently in the areas of health care, the physical culture movement and even in education and culture. There are cases of illegal appropriations, crimes involving documents, fraud and extortion, crimes committed in official capacity, currency, smuggling, illegal commerce and other crimes.

Some crimes involve the application of the new economic mechanism. Since profit is the base for all other funds, all sorts of shenanigans take place to increase it.

In some cases, prices of individual items have been artificially raised. Occasionally, some okrug people's councils set unrealistic prices, thus increasing profits, on the basis of insignificant changes and improvements of an item.

There have been frequent cases of fictitious marketing. Efforts have been made to conceal above-norm stocks of materials and raw materials, which is a violation of the compensation program. What is usually being done? Enterprises sell the materials to marketing and procurement organizations and, after the balance investigation period is over, "repurchase" them, thus, in fact concealing them.

A new phenomenon in the area of economic crime has appeared: groups show up in most of the okruga; others crisscross the entire country. Organized groups develop which seek the weak spots in the legal documents and use all available loopholes to accumulate illegal income and benefit from it. Primary, from our viewpoint, is the question of the auxiliary activities of different organizations. Although the Council of Ministers has issued a decree regulating such activities, the decree is not always observed.

People are punished but no one is guilty.

Vasil Mikhov: In some cases, the regulation on the application of the economic mechanism is violated in industry; technological discipline is not observed and invested raw and other materials are improperly accounted for. We also come across cases of fictitious implementation of production plans. In construction and industry improper calculations are made concerning the various types of work and output. Their purpose is to improve on results, thus earning higher wages and obtaining higher bonuses. Records in construction mechanization show work done in two or three machine shifts although the machines are operated during one shift only. This is a harmful phenomenon which is spreading and must be stopped. Some personnel in departmental transport organizations pad their trips in their road charts and reset their odometers. They are thus able to report longer haulage and to steal the thus-saved fuel. Again in construction, real economy could be achieved from the foundations to the roof of a building by applying ceilings and using the piece-rate method. A strict estimate of requests filed for building a residential block would inevitably reveal that an additional story could have been built with the same amount of materials.



"Have 'new areas' appeared in the case of such appropriations?"

For the past 2-3 years there have been appropriations of valuables, such as tickets, cards, travel sheets, bills of lading, etc. Cases of such appropriations are now being tried in Turgovishte and Razgrad. A crime involving fuels and lubricants was detected in Pleven, involving a number of people. Another case of illegality is the appropriation of precious metals, mainly in industry and mining. All plants use contact relays, counters, and others, made of silver or platinum. False documents are being drafted and such parts are written off. Meanwhile, the precious metals are appropriated. Such crimes were discovered last year at the Dunav Cars Plant in Lom and at the Nonferrous Metals Processing Plant in Kurdzhali.

"If a warehouse chief fails to protect materials or finished goods he may be punished and even prosecuted. His superiors, however, who also should be careful managers, are always left untouched"....

The struggle against negligence must be intensified not only by the specialized authorities but also by enterprise collectives and economic managers themselves.

#### How Is Disorder Created?

Boris Madolev: Crimes related to the decree on self-satisfaction continue to be committed in agriculture. Individual citizens grossly violate the governmental decision, with the help of APK [agroindustrial complex] officials and by some enterprises of the Rodopa Trust. They are also helped by some officials in the okrug selection centers managed by the Cattle and Sheep Breeding NPO [Scientific Production Trust]. Private individuals who purchase livestock classified as belonging to one category and who subsequently sell them as belonging to another are allowed to benefit. The price differential here is high.... We have reported to the NAPS [National Agroindustrial Union] and the bank all such discovered cases and we expect that measures will be taken. The possibilities of a family which would like to raise cattle must be assessed on an individual basis, and a good intention must not be spoiled. Profiteers must not be allowed to build up their private farms. In our view, the road is clear: we must increase control in signing contracts and formulate realistic standards as to what types of livestock or crops can be raised and in what quantity and size. The conscientious working people wonder how others have been able to set up entire farms without having any land or other necessary prerequisites. We must mandatorily establish order in and supervise such activities.

Some APK do not record their entire output. Unconscientious people aware of unaccounted-for goods appropriate them as they wish. A typical example is that of Gelemenovo Village, of the Bazardzhik-sever APK. Together with other officials, the chairman of the branch farm deliberately confused accounts thus enabling them to give to relatives and friends grapes, wine, liquor, lambs, pigs, grain and fodder without pay.

Violations are committed at food industry enterprises mainly through negligence and waste. Last year, finished goods worth 398,000 leva were

wasted at the Rodopa Combine in Pernik. There was a trial and the guilty were punished. A crime was also discovered at the Sofia Brewery Combine in Gorublyane, involving containers.

This year's practical experience as well indicates that the law on the protection of agricultural property is being violated. The investigations which were conducted have revealed frequent cases in which agricultural goods are removed from fields, trucks, combines, or temporary storage areas.

#### If the Fingers Are Dipped in the Honey

Ivan Tsonev: Usually, abuses in trade involve surpluses: the classic method of appropriation. Surpluses, in turn, are created by cheating on the weight of products, adding water or losses based on so-called commercial risk. Cash registers are deliberately damaged. A properly working cash register is a hindrance to misappropriations, for which reason it is deliberately broken.

"It is being said that 'the sidewalk trade' makes the sale of surpluses possible....."

This is true mostly in public catering, where goods must be recorded with a cash register. By avoiding such registering a profitable surplus may be created.

"How does control operate?"

Control is a matter of decisive importance. If there is no accountability public property is encroached upon. Without control one develops the idea that anything is possible. Substandard audits encourage the criminals. Everything seems in order with a first, second or third audit. A serious audit, however, all of a sudden indicates shortages of thousands of leva. Those who connive are equally guilty....

"How is the 127th Decree being applied?"

The 127th Decree contains severe penalty stipulations. It is used above all against those who cheat the citizens. Every year, together with internal trade control authorities, we remove from their jobs some 2,000 to 2,200 people. Many other penalties have been applied as well. It is stipulated that the manager of a trade organization who appoints an individual who has been sentenced or does not fire an individual who has committed a violation as per decree No 127, must be removed from his position and assigned work in material production. We conducted an investigation throughout the country and noted no more than a few cases in which this stipulation had been applied. In other words, the decree is not being fully observed.

According to Ukase No 274, individuals who have been tried in court, charged with money shortages and deprived of the right to hold materially responsible positions may not be appointed. However, many people submit clean police records and are therefore given jobs. Family connections in trade is another wide loophole for abuse. The project may be assumed in the name of the spouse, the father or the son or by any other relative who has not been

charged with misuses. In other words, people who officially have no police record are put on the payroll while the more experienced ones, those who have already "dipped their fingers in the honey," are left to deal with material values. Unfortunately, studies have confirmed that the number of people who encroach on public property for the second time is large.

According to statistical data, the largest number of abuses is in trade. It is here that commodity and material values are handled, there are cash dealings and temptations are high. This is a sector in which group crimes are steadily increasing.

#### Feedback

Prevention is the basic trend in our activities, engineer Ivano Dimov said. That is why we try to make it broader and more efficient. What are we doing? In most of the sectorial ministries we regularly draft information on crimes committed within their departments and the reasons for them. In the various sectors of the national economy we determine the most vulnerable places and the most typical conditions which lead to crimes. We observe and study them and submit to the respective departments specific suggestions and initiatives to prevent violations of the law on time.

Our signaling the leadership of individual economic enterprises and organizations is having a positive effect as well. We make efforts for our services to strengthen such activities. The Law on the People's Militia gave us the right to levy penalties on economic managers who fail to observe our recommendations. We try to exercise our rights properly. We also greatly rely on the help given to us by the prevention councils which have been set up in the large enterprises and economic organizations. We have established good feedback with a number of okrugs. However, still more remains to be done, for some economic managers do not answer our letters or carry out our recommendations.

Engineer Ivan Dimov discussed intradepartmental control: "Each organization in the realm of material production has its intradepartmental control. However, it is not always on the necessary level, for which reason the job is not done properly. Yet this could be the strongest and initial step taken against violations. We come across a number of strange cases in which several audits have been made and nothing has been proved. It turns out, in the final account, that all that time someone has been engaging in appropriations while the auditors have officially been doing their work."

Perhaps even stricter penalties for more serious economic crimes and for the misappropriation of significant amounts of money for personal use may be necessary, said, in conclusion, the chief of the Economic Administration at the People's Militia Directorate. Penalties for the production of substandard items should be made even stricter, for in the final account this too is a theft and society has been harmed. By the fault of the economic manager, whatever his level, damages to the state from substandard goods amount to thousands of leva while the sentence (assuming that the person has been tried) may be no more than a few months of corrective labor! Such a penalty is not



consistent with the social danger of the phenomenon, particularly now, when quality is the main strategy in our development.

Remark: One does the work and five sign for it.

"Specialized groups for auxiliary activities" are crawling all over the country and it is difficult to control them. They set their own norms, make their own computations and make their own payrolls.... They pad amounts of work done and pay themselves high salaries by including in their payrolls relatives, friends or acquaintances, all of them "dead souls." One person does the work and five people sign for the wages. The most widespread are groups engaged in waterproofing, cleaning canals, producing plastic goods, etc.

Here is a curious fact: our country has probably a sufficient supply of clothespins to last the next 20 to 30 years. Private craftsmen are producing all sorts of items under the protection of state enterprises. Such items may seem petty but thousands of leva have been spent to make them. Who benefits? Above all the private individual but also the organization which lends its name, for it can thus earn unplanned profits. Let us not even mention the quality of such items.

Last year, the MVR [Ministry of Internal Affairs] authorities exposed the production of substandard brushes worth 1.5 million leva. Individuals or entire brigades have specialized in "auxiliary activities," by permission of agroindustrial complexes, craftsman cooperatives, rayon production combines, tourist societies and sporting organizations. For example, the agroindustrial complex in Antonovo, Turgovishte Okrug has "enterprises" in Sofia, Plovdiv and Varna.... The Sredets APK in Sofia and the APK in Vratsa, Krivodol, Gabare and Trun are also engaged in energetic auxiliary activities.

How long will we continue to allow and finance the initiative of people eager to put money into their own pockets?

Khristo Gutsev: The public wealth is the source of the most precious goods from which all of us benefit. However, are we handling it properly? State property is national property, it is mine, yours, ours. It is the base for our personal well-being and our general social progress. If thousands of leva are misappropriated and materials worth millions of leva are wasted, it is not our economy alone which suffers. Each case of irresponsibility violates our faith in justice. Any crime which goes unpunished creates indifference, which has dangerous consequences.

What is our reaction to encroachments on the property which belongs to all of us? What is our counteraction? How do we oppose misappropriations and thefts in shops, warehouses and fields of things which are common property? If we see that someone is picking fruit from a tree in our own yard we would start



shouting. If we feel that someone is picking our pockets, we would start shrieking. Are we not showing tolerance for thieves and robbers if "the apples are in someone else's garden?" Who is the loser if we calmly witness harmful actions or remain as apathetic observers of gross violations?

5003

CSO: 2200/175

BULGARIA

EXCESSIVE WASTE OF RAW MATERIALS, ENERGY EXPOSED

Sofia POGLED in Bulgarian 8 Jul 85 pp 1, 4

[Article by Lazar Rosnev: "Economy!--But How?"]

[Text] The distance between what has been said about economy and what has been accomplished is truly striking. Day after day words become sharper, arguments in favor of conservation weightier, and appeals increasingly persistent; meanwhile, the figures listed in reports of outlays do not change. This five-year plan we made virtually no progress. We remain in the same position in terms of material outlays as we did at the start. What happens is that some economize while others waste and, in the final account, the bottom line is zero.

Obviously, this is a serious problem, which cannot be resolved merely by explaining its exceptional importance.

For years on end we have traditionally set conservation assignments. After extensive explanatory work we began to impose ceilings, levy administrative and material penalties and provide material incentives. However, all of this is being done haphazardly, starting with a pressure exerted from the center outwards, gradually lost along the rungs of the administrative ladder.

For quite some time we have been saying that we must accomplish a drastic change in the use of raw and other materials and energy. However, it is as though we are expecting this problem to be resolved by others over a long period of time. It is true that there are programs but no real work and results, although the situation is already becoming critical.

Although this may sound exaggerated, this is hardly the case, for wherever you go today you will hear that something is in short supply, something else is available and, despite the clearly worsened situation with energy, metal and construction materials, the view is that these difficulties are temporary and that later, somehow, everything will be in order again.

Yet the time has come to come to our senses and to face entirely what we are doing in terms of conservation.

Here is a major question: Where can we economize? Practical experience gives us the answer: everywhere and in everything. Is this not accurate, for all of us use in our work materials and energy, where something could be saved. Our efforts are focused mainly in industry, i.e., where resources are consumed. We shall not deny the substantial reserves in industry. Nevertheless, they are neither the most important nor the decisive ones. It is trying to keep repeating this, but the experience of the advanced countries indicates that about 80 percent of reductions in material outlays are achieved in designing and engineering items and technologies, and only 15 to 20 percent may be achieved in the course of the production process. It is scientists, designers and technologists who can resolve the problem. If such is the case, are we concentrating our main efforts in that area? The logic is that with the help of this elite we can and must operate on a different basis, on a concentrated manner, quite different from the mass struggle for economy.

We may be told that this is being done. However, are we not having, here as well, too many appeals and general requirements and quite few regulations, incentives and strict rules? For example, we have the stipulation of the economic mechanism that 30 percent of production savings could be used as weight supplements. It is also known that someone must pay for cost overruns. Yet does anything like it exist in the case of designers and engineers? Are there wages related to savings in any way? Is the development of an economical item or wasteless technology a real criterion in assessing and rewarding their labor?

It is clear that the way the system works now heavy artillery is not committed to battle. Another approach, a different system of work for economy is needed in science, engineering and design, which would motivate and move the mind, our mental elite, in the necessary direction, thus making economical production the core and the meaning of creative work. The same goes for application as well. This year, we are expecting savings totaling 600 million leva from the application of developments. Here as well, however, the work is sluggish. Here again we need other solutions which will make the people more interested.

What is the situation in industry?

The statistical answer is categorical: it is poor! In the first 5 months of the year, savings in material outlays have totaled no more than 23,098,000 leva. Inevitably, the question follows: why so little?

The Regulation on the Economic Mechanism was a major step forward in linking wages to the conservation of raw materials, materials, fuels and energy: 30 percent of the economy may be paid directly to those who have achieved it. It is a truly good incentive, but its results are quite small. The main reason is that in practice this incentive is virtually inoperative, for the mechanism is not being applied.

Wrestling with figures may be somewhat boring. However, figures describe the situation best. Here are data for last year: savings totaling 226 million leva were achieved and out of such savings the additional wages which were paid totaled 12,143,000 leva. In other words, the working people who achieved

such savings were deprived of another 55 million leva. That is how any interest in saving was dampened. Bearing in mind that the 12 million leva account for no more than 0.15 percent of the overall wage fund, one can see how symbolic this incentive has been.

If you were to ask an economic manager if he is interested in economy, his honest answer would be negative. The reason is simple: he finds it much more convenient for the labor collective to absorb the loss of the one-time economy incentive than to wonder how to make ends meet subsequently, when the plan for subsequent periods absorbs any discovered reserves. The administrative apparatus, in turn, is unwilling to complicate its work with additional accountability and control over savings and specific norming of material outlays as well as quarrels and the need to provide all kinds of proof to the various authorities. The accuracy of this can be confirmed by the fact that today no more than 10 percent of the enterprises have set up an additional wage fund based on saving on direct material outlays. This is the result, the consequence of the lack of adequate material incentive on the part of economic managements, the fear of losing discovered reserves as a result of the application of the dynamic planning method and the unwillingness of administrations to be burdened with additional work. Let us also add that it is no easy matter to record and prove savings, for the bank demands so many documents that rarely does anyone undertake to make such computations.

No good work can be accomplished in economizing without a good standard base. Yet no realistic standards updated in terms of changes in design and technology exist. The usual practice is to reduce standards mechanically to the norms stipulated in the plans for material outlays per 100 leva output, which is no more than an adaptation. This torpedoed brigade cost accounting and eliminates the link between wage and thrift. In this case the lack of adequate measuring tools to determine outlays, poorly organized warehouses, the frequent substitution of materials and the instability of planned assignments cause great difficulties.

Naturally, we could add here other reasons and difficulties. This in itself, however, is sufficient to raise loudly the question of whether we are controlling efforts to economize?

5003

CSO: 2200/175



FOREIGN TRADE OFFICIALS ADOPT WESTERN BUSINESS PRACTICES

Sofia POGLED in Bulgarian 8 Jul 85 p 6

[Article by Degendorf POGLED correspondent Ivan Ganev: "The Staging of 'Aida'"]

[Text] Why Will the Bulkhimeks Premiere Not Be the Last?

Today Bulkhimeks was visited by Siemens. No, it was not the intention of this famous concern to sign any kind of big deal with the firm; it was simply offering a telephone exchange and Telex equipment. The Siemens representative, a young neat man, pulled files and prospectuses out of his briefcase with such refined, measured and precise motions that a person could unwittingly ask himself: Is it possible that Siemens is teaching its people how documents are to be taken out of their briefcases? For the rest--how to make the presentation and how to try to place a bigger order and offer a lower price, it is clear that they are being trained, well-trained at that.

In the final account, Siemens sold a telephone exchange at conditions advantageous to Bulkhimeks (and quite likely to himself): for the first 2 years the exchange system will be used free of charge, i.e., without payment; for the first 3 years it will be maintained free of charge (the maintenance contract is a necessary document for the installation of a telephone. Without such a contract, i.e., should repairs of the telephone system not be guaranteed, it will not be connected to the urban telephone system).

Why was it necessary for the giant, the 100-year-old Siemens, to visit the Bulkhimeks firm? Was the other way around not more customary?

The custom is for the seller, whoever he may be, to go to the customer. In this case, the seller is guided by the unquestionable rule, which is a law in commerce: the customer is the boss. This statement is not symbolic but real. By ordering, the customer gives the seller work and the possibility to exist.

Tomorrow, when Bulkhimeks would visit Schell, the roles will be exchanged.

And since Bulkhimeks is a new company, it must seek business contacts with new customers every single day. Bulkhimeks begins by establishing a contact with the specific company, then goes to the company, introduces himself, tries to

feel the grounds and to convince an eventual customers of the advantages of working together. Establishing new contacts is a skill, simply because the mentality of the customer is such that he is conservative when it comes to something new. He finds it difficult to go into new territory because of already developed and tried business relations, trust and personal contacts with the old partners.

I witnessed discussions between Bulkhimeks and a plant belonging to a large concern. Bulkhimeks was offering one of its products. Laboratory tests at the plant had already rated its quality as satisfactory. Nevertheless, the purchasing officer was exceptionally cautious. He neither retreated nor remained significantly silent. On the contrary, he expatiated extensively and offered as a drink: it turned out that this very day he had been promoted to procurement worker, which in the plant's management hierarchy meant a great deal to an official, making him something like deputy director. However, the essence of what he said in this flood of words was washed away. It is true that he accepted the proposal of supplying a certain volume for plant testing, but for information purposes only, for any eventual acceptance was to come later. It was obvious that the newly appointed procurement worker was to think a great deal and seek a great deal of information before becoming convinced of the advantages of even such a minor deal.

However, Bulkhimeks is patient. Khimimport has firm partners and the situation with new partners is the following: little by little minor deals become bigger deals, in the way that a snowball rolling down a Bavarian mountain becomes as big as the head of a snowman.

AIDA is an old and tried system in global commerce. Here it is particularly honored. Bulkhimeks applies it as well. AIDA is a beautiful acronym but hard to apply. It requires professional knowledge, commercial talent, clear thinking and quick reactions. The initials of AIDA stand for the English words Attention, Interest, Drive and Action. In other words, you must be attentive toward your client, understand his interests, direct him, as you convince him of your advantages, and achieve specific results. Naturally, this is a very schematic presentation. Thousands of variants have been developed for its practical application.

...Nevertheless, as I was listening to the performance of the various AIDA arias, I kept thinking of what Gunther Walraff had written and of other things I had glimpsed here and there: the way the person becomes simply a little cog in a huge and well-lubricated mechanism of trade and industrial relations, the way his actions, 8 hours a day, are timed to the tenth of a minute, starting with the precisely determined time when a piece of paper is taken from the table and put in the typewriter, to the answer of 11 (no more and no less) words which must be given in a suitable manner and in the course of a suitable conversation. Dozens and hundreds of such systems have been developed, which companies buy for a great deal of money and apply strictly. Everything has been computed, described and normed: like a totally error-free and totally soulless computer.

But let us not stray. Usually, specific results are rarely achieved in a first business meeting. What is important is to leave a good impression.

What is important is to inspire a feeling of reliability and to be liked as an eventual trading partner. At the same time, in addition to showing a perfect knowledge of marketing and the market situation, you must find a common language on topics outside commercial interests. You must regularly read newspapers, you must be aware that the previous night the gas station has been robbed, for example, and show proper indignation. You must also know that the city soccer team lost its latest game and express your regrets. You must be informed that the price of beer in Munich was raised by 6 marks during the 15-day beerfests and express your amazement.

This creates an atmosphere of so-called personal contacts, which later become quite useful.

Nevertheless, why is this major Bulgarian foreign trade undertaking necessary--the building of an important and export warehouse base of the Khimimport branch company in Degendorf's industrial zone? It is obvious that, on the one hand, it must be closer to the customers. However, could this closeness not be provided with modern transportation instead of piling so many goods in one place?

Without even asking the question, the answer was given to me at said concern. "We want a secure supplier," we were told. "We are ready to sign a contract for a large quantity but we must be confident that at the precisely specified time of the month the firm will meet all our requirements."

It is not a question of this concern alone, for customers are in the hundreds. Chemistry is a leading item in Bulgarian foreign trade and our chemical plants ship abroad--including the West--large quantities of soda ash, plant protection chemicals, bicarbonate of soda, urotropin and fuels. Under these circumstances, could the supplier rely exclusively on the transportation system in making sure that the customer will receive the goods on time? Worldwide practical experience indicates that neither Morgan nor Bayer rely on their transportation system alone, regardless of how reliable it is.

One must have a base from which "to correspond" with the customers. Intermediary units and brokers--the so-called trading companies--should be avoided.

"Deadlines have become sacrosanct in trade," we were told at the joint Bulgarian mission in Bonn. "Here it is less a matter of quality than deadline. If you are on the market you must offer good quality, otherwise the market will throw you out. The problem is that of procurement deadlines. You lose your opportunity if you are 1 day or even a few hours late. The plants keep 1-2-day stocks, no more. If you are late you doom them to idling and losses. Therefore, whatever the quality of your item, if you are slow in delivering it, you are an unreliable company...."

Khimimport, however, intends to be a reliable company. In the FRG, in Bavaria in particular, if you mention Khimimport both the banker and the industrialist take off their hats. It is no accident that our foreign trade enterprise has won the bid for buying a lot in the port area in Degendorf. This port is the most modern of its kind in the upper part of the Danube and is equipped for



loading and unloading containers. More than 100 barges belonging to the Bulgarian River Navigation Administration dock here every year and it is from here that the rolled steel produced in Kremikovtsi starts on its way to further processing. Recently, it also became a port for the Bulgarian chemical industry.

Mr Theodor Potinger, one of the principal stockholders of the Donauhaffen Gesellschaft Company, which was formed as a result of the merger of the Joseph Walner and Karl Tidemann companies in Hamburg, expressed the fear that eventually the Bulgarian foreign trade organizations, Khimimport in particular, may lose interest in the port because of the long wait of their shifts. "We are ready to anticipate the wishes of our customers," he added hastily. "We are ready to install a second crane and other additional equipment."

Why has a special association been set up to assign responsibilities to the individual firms and the community in the development of the port? Because, according to Mr Potinger, the activities of Khimimport and its affiliate company, Bulkhimeks, organized in accordance with FRG laws, are a new aspect in the economic development of the entire area; it is thanks to such activities that the structure of the economy becomes more varied and new jobs are created. "This," Theodor Potinger says, "is particularly important considering the current economic situation in the country."

Here is an interesting figure: trade between Bulgaria and the FRG has already reached the amount of 2.1 billion marks annually. The days of Bulgarian economy and culture, which took place in Munich, brought to light Bulgaria's economic possibilities hitherto unsuspected by some commercial and industrial circles. In his greetings, Todor Zhikov, Bulgarian People's Republic State Council Chairman, pointed out that possibilities for further cooperation are substantial.

Mr Georg Karl, the district manager in Degendorf, supports economic cooperation between Bulgaria and the FRG.

"It did not bother us that some 4 or 5 years ago, when our port opened, it was immediately labeled 'Russian,'" he said. "The reason was that there were people who opposed our cooperation with Soviet enterprises and firms in other Eastern European countries."

According to Mr Karl, such opposition of some circles are based on secret rivalry and the concept that the FRG should develop its relations exclusively with the West. The district managed by Mr Karl, however, needs economic relations with the socialist countries as well, with which it is naturally related through the Danube River. This applies not only to this district but to the entire area of lower Bavaria, which has fallen behind in its economic development compared with the other parts of the country. "While the so-called economic miracle was blossoming in our country," he said, "our people had to look for work elsewhere, outside our area. Unemployment increased also as a result of the mechanization of agricultural work."



Mr Georg Karl is one of the authors of a large plan for the economic development of lower Bavaria. He anticipates the attraction of capital and the construction of industrial enterprises or their branches. To the district manager, Khimimport is an enterprise operating on a European scale. Visiting Bulgaria during the Degendorf days held in Sofia, he realized the strong economic backing of Khimimport and Bulkhimeks.

In the Degendorf district, Bulkhimeks "feeds" small and medium-sized companies. I do not know how many people have been saved from unemployment by this company so far; I know, however, that in this respect a sense of measure must be shown: Bulkhimeks is not the only enterprise which supplies capital, provides jobs and contributes to reviving the economy. However, I do not wish to suppress an emotion which I felt listening to good words about Bulgaria day after day. It has so happened that a large administrative area in one of the most developed European countries considers Bulgarian capital and Bulgarian industry not only an equal partner in economic cooperation but something more as well: an economic and social factor in its own development.

If this is understood, no restraint could stop a Bulgarian's heart from fluttering.

5003

CSO: 2200/175

1 October 1985

## CZECHOSLOVAKIA

## PARTY OFFICIAL ASSESSES FUEL, POWER SITUATION

AU100829 [Editorial Report] Bratislava PRAVDA in Slovak on 9 September carries on page 1 a 1,650-word editorial article by Jan Udvardy, deputy head of an unspecified Slovak Communist Party (CPSL) Central Committee department, entitled "We Pay Tribute to Honest Work." After stressing the irreplaceable role played by the workers of the fuel and power sector in the process of material production and in the smooth course of the society's life and economy, the author continues: "The fulfillment of raw material and fuel-power programs has been one of the basic party goals in economic policy. More than 350,000 people working in the mining and power industry sector participated in the realization of this goal within the entire national economy, more than 70,000 of them in Slovakia. If the preliminary results signalize what is, on the whole, a favorable fulfillment of the plans, then the primary credit for this success goes to them."

Udvardy then recalls the record coal extraction results on 1984 (a total of 129.3 million tons of coal and lignite), underscoring the noteworthy share of the miners in Northern Bohemia in this result due to their mastery of new, highly efficient extraction machinery. "This year, too," he continues, "the miner followed up their good work of last year. By the middle of August they had extracted almost 80 million tons of coal, that is approximately 290,000 tons more than set down by the plan. The extremely successful extraction in the two decisive basins of the Subkrusne Hory mountains, as well as the overfulfillment of electric power production in nuclear and hydroelectric power stations, have caused certain difficulties in sales of coal for power-generating purposes [energeticke uhli]. And so, even on this festive occasion (Miners' Day) one cannot avoid recalling the continuity of the process of coal extraction and consumption. Whereas the fuel stockpiles in electric power stations attached to the fuels and power sector surpass all preceding records, all other sectors are neglecting the planned procurement, and thus also the creation of prescribed stockpiles. The largest shortfalls in this respect are in the industrial sectors in Bohemia and Slovakia."

The Slovak and Moravian miners, Udvardy continues, have extracted 5,221,715 tons of coal and lignite during the 8 months of this year "despite complicated extraction conditions"; that means 19.215 tons more than planned; results were particularly good with regard to graded coal, 41,000 tons of which have been delivered to consumers over and the above plan.

The author then notes the deterioration of extraction conditions because the easily accessible coal reserves have been exhausted, and the considerable shortfalls in the most productive working places of the enterprises of the coal and lignite mines due to unforeseen cave-ins. He adds: "Had the preparation been more systematic, particularly in the geological mining research, these negative phenomena need not have taken place; it would not have been necessary to hastily eliminate the deficit for the enterprise and the society by ineffective methods; and the risks of the miner's work--his health is of primary importance to our society--would not have been enhanced."

Udvardy then states that last year the extraction and processing of magnesite covered the needs of the CSR's metallurgy, engineering metallurgy, and cement production. In dealing with the gas industry, he notes that last year this sector delivered more than 10.6 billion cubic meters of natural gas and more than 3.4 billion cubic meters of city gas to consumers.

"This year's results are also favorable," he adds, "since deliveries of natural gas to consumers are being overfulfilled by 3 percent, and deliveries of city gas by 3.5 percent. This was certainly due to this year's extraordinary winter; however, the not always rational and prudent consumption of this energy, both by large consumers and small, has contributed considerably to the more than 10-percent increase in the consumption of natural gas, compared with last year." Udvardy then states that the subterranean gas reservoirs were filled with more than 1.3 billion cubic meters of gas by the middle of August, which is more than 200 million cubic meters more than during the same period last year; and that a new storage center for crude oil has been opened for test operations in Gajary.

"The electric power stations in the fuel and power sector last year produced more than 67,500 gigawatt-hours of electricity," Udvardy continues, adding that "currently more than 1,000 gigawatt-hours of electric power" has been produced over and above the plan. He then deplores the fact that this energy is being used uneconomically, that the enterprises and plants consumer far more than in other industrially developed countries, and states that energy consumption must become more rational.

Udvardy concludes by noting that the party's annual members' meetings will have to deal with the better handling and valorization of energy.

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CZECHOSLOVAKIA

ELECTRONIC UPGRADES IN FUELS, ENERGY FIELD VIEWED

Prague AUTOMATIZACHE in Czech No 3, 1985 pp 113-115

[Article by Jiri Jise, Federal Ministry of Fuel and Energy, Prague: "The Aims of Electronic Applications in the Fuel and Energy Fields"]

[Text] The development of Czechoslovak electronics, particularly micro-electronics, microprocessor and microcomputer technology, and measuring and regulation technology, is gradually paving the way for electronic innovation in the fuel and energy fields.

Activity in the fuel and energy fields is focused on the mining and refining of fuels and on the manufacture, transformation and transportation of energy. The degree to which electronics have come into play in the fuel and energy fields is dependent mainly on the supply of technological systems and machines produced by the machine industry and electrotechnology sectors.

On the basis of the agreement of the Presidium of the CSSR Government of 9 February 1984, a "Program for Expanded Use of Electronics in the Fuel and Energy Fields" was put together in April 1984. This program, together with similar programs for other fields and other programs such as A 07.

"Development of the Material and Technical Bases for Expanded Use of Electronics," and A 08, "Development of Applied Electronics," is part of the "Long-Term Complex Program for Increased Application of Electronics in the Czechoslovak National Economy." The Program for Expanded Use of Electronics in the Fuel and Energy Fields is part of the Project to Apply Electronics in All Economic Production Units. Each unit's projects describe individual applications of electronics from the standpoint of materials, time, costs and benefits. In mid-1984 and early 1985, the economic production units in the fuel and energy field re-evaluated and upgraded their projects for expanding the use of electronics in such a way this undertaking became a significant intensifying factor in the development of these fields.



Under the Eighth 5-Year Plan, labor productivity in the fuel and energy fields is supposed to increase by 5.4 percent, material costs are projected to decrease by 4.7 percent, and overall costs are expected to increase by only 2.1 percent. It is anticipated that execution of the program to expand the use of electronics in these fields, there will be reductions in the work force, material savings, and fuel and energy savings. These savings will be reflected in a 0.8 percent improvement in labor productivity in the adjusted actual operations and a 3.1 percent decrease in overall costs. The goals of increased application of electronics in the fields as reflected by the given economic indicators were specified separately for individual economic production units in the areas of deep mining, surface mining, and gas works and for the bitumen mining, energy and uranium industries.

Two events made a significant contribution to completion of the project on electronic applications at the economic production unit. One was the seminar of "The Applications of Electronics, Robotics and Innovation at Higher Levels," held in Havirov in May 1984, and the other was a meeting on "The Task of Science and Technology In Meeting the Goals of the Eighth 5-Year Plan and the Development of the Fuel and Energy Fields by the 1995-2000 Period," held in Prague in November 1984. At these meetings, the main presentation was given by the Minister of Fuel and Energy of Czechoslovakia, and other contributions were made by the Director-General of the Economic Production Unit and the directors of the research institutes active in the field concerned.

The application of electronics, described in detail in the economic production unit's industrialization for each individual area, deals with the following:

In the area of deep mining of coal:

--Technological equipment

Preparations are being made for the manufacture of modern technological equipment for mining that is equipped with electronic control systems. Here, electronics are used as a means of increasing the reliability and safety of machinery and to make it possible to connect previously developed machines to systems that are controlled remotely. The solution will also be based on international cooperation of the member countries of the Council for Mutual Economic Assistance.

--Automation devices

This largely concerns the development and manufacture of technical means for controlling or regulating the functioning of technological equipment of various types (degassing station, the distribution of water and air, the burning of shale, adjustment stations, monitoring the physical environment in the mines, etc.). These are small-scale actions with significant rationalization effects.

--Safety systems

The solution is focused on improving geophysical instrumentation technology for purposes of making local prognoses of mountain vibrations and on improving mining measuring technology for purposes of evaluating reinforcement structures, securing the stability of mining jets, and developing instrumentation for analyzing the air quality in the mines.

--Automating the manufacture of deep-mining equipment

The OKR (Ostrava-Karvina area) Ostroj Enterprise in Opava manufactures equipment for use in deep mining. Complex modernization of the enterprise is now ensured by the construction of new plant and equipment. Broad application will be made of electronics and robotics in this enterprise as part of flexible production systems introduced in fulfillment of a mandatory task under the State Plan for the Development of Science and Technology; these will include hierarchical production control systems, automated production systems for the machining of box components, automated production systems for welding, and automated production systems for materials handling.

In the area of surface coal mining:

--Installation of the new DIAMO equipment for transmission and control at the technological units, with the goal of eliminating old-fashioned small-wire control and supplying the necessary information to the control desk of the technological unit.

--Incorporation of thyristor technology in large machines.

--Diagnostics of rotary machinery without disassembly, by measuring vibrations of the stripping shovel, or overloads of the dumping machine and long-distance conveyor belt.

--Complex operational automation of the coal mining and stripping process, to achieve uninterrupted operation of computer technology characterized by a short response time to impulses received from technological processes within a realistic time frame.

--Automation of excavating and blasting stations, automation of the control of the cooling system operation, and automation of the control of chemical waste water adjustment.

In the area of gas production and bitumen mining:

--Control of gas work system

Significant savings of energy and labor can be achieved by building a better information and control system for a transit gas pipeline and for a domestic pipeline system. This capital investment construction project is to be carried out under the State Plan for the Development of Science and Technology.

--Control of the technological processes of compressor stations, transfer stations and underground gas storage facilities.

--The control of geological research works.

--Prospecting and controlling digs.

--Controlling mining centers.

In the area of energy:

--Automated systems for controlling technological processes in nuclear power plants

Electronics will be applied as a means of increasing operational safety, effective utilization of nuclear fuels, and safety and health protection during work. Electronic systems will be used to provide diagnostics, identify defects, control chemical systems, automate the processing of information from the radiation control, make innovative changes in the information systems of the V 1 nuclear power plant, and enhance the "KOMPLEX URAN" information computer system in the nuclear power plants in Jaslovske Bohunice and Dukovany, which handle training for the personnel of nuclear power plants.

--Mass remote control (MRC)

The present transmitters of the MRC system currently control approximately 350 MW of the installed input of accumulatory receivers. During the course of the VIIIth Five-Year Plan, the MRC signal should cover most of the area of Czechoslovakia and there should also be a broadening of the sphere of utilization of MRC, mainly in the Centralized Heat Supply system and in the control of large-scale consumption.

--Control of central heat supply

Conditions will be created whereby it will be possible to distribute heat through the automatic operation of transfer stations. Under the Eighty 5-Year Plan, three dispatching systems for the central heat supply will be introduced and ten dispatching systems will be prepared under the Ninth 5-Year Plan.

--Further development of automated dispatch control of the electrification system.

--Automated systems for the technological processes involved in the distribution of electrical energy.

In the area of the uranium industry

--Instruments and measuring systems for prospecting, mining and processing uranium ores and monitoring hygienic conditions in the uranium industry.

--Automated systems for controlling the technological processes of mining and processing uranium ores.

--The development and innovation in the range of electrotechnical products manufactured by the Czechoslovak Uranium Industry Enterprise. The manufacturing and technical base of the uranium industry represents almost three times the productive capacity of the electronic and electrical fields concentrated in the other areas of the fuel and energy sector. Under the Eighth 5-Year Plan, further production growth will be ensured with regard to needs in the area of fuel and energy. This will involve mostly the manufacture of selected sensors, components for processing specific variables (evaluating circuits, converters), control systems with hard-wired logics, mainly the DIAMO safety system, systems for the transmission of binary and analog signals, freely programmable automatic machines with add-on components and electronic systems for the control of medical and industrial betatrons. The manufacturer referred to above primarily fills needs in the fuel and energy fields. As regards supplying new investment units, the control systems manufactured in the enterprises of the uranium industry are used in surface mining as well, mainly for the energy field, as a part of large-scale supply operations carried out in the metallurgy and heavy industry areas.

The progress under the Eighth 5-Year Plan has been such that completion of the electronics application projects of the economic production unit is assured.

Sufficient research and development solution is ensured by the system of tasks incorporated in the Plan for the Development of Science and Technology. Those tasks are being solved in the State goal programs such as A 01--The Development of Nuclear Energy through 2000, A 02--The Development of Applications of Electronics, as well as through the State scientific and technical program such as P 01--The Mining and Purification of Selected Types of Fuel. Solution is also ensured by the system of economic tasks set forth in the Plans for the Development of Science and Technology of the individual organizations in the fuel and energy fields.

The application of electronics in the fuel and energy fields is ensured not just by the program for the sector but by new products and technological components supplied mainly by metallurgy, and the heavy industry field also plays a decisive role.

An example of the above would be the nuclear power plants with VVER-1000 reactors, the innovative Tc 2-N technological units for surface mining, and an electrically powered compressor aggregate which represents a significant innovation in the Czechoslovak gas industry.

The program of applied electronics in the fuel and energy fields is above all focusing on the solving the problems of automated control systems for existing aggregates and technological units and on the repeated



application of results attained in the development of science and technology in capital investment construction. Implementation of the plans for applied electronics will be carried out, in the case of multiple recurrences of each electronization application, by organizations working in the industrial electronics field, or, as regards piece or retail manufacture, by the production and technical base of the fuel and energy fields. This explains the great emphasis placed on the growth of the electrotechnical and basic production and technology areas. We assume that their productive capacity will increase by 20 percent under the Eighty 5-Year Plan and will be concentrated on the production of sensors, control systems for automated components manufactured for retail sale, the DIAMO control systems, spark-proof mining complex control systems for deep coal mining, and repair and maintenance of electrotechnical equipment. There are very concrete plans in the fields of mining and processing of solid fuels, the gas industry, the mining of bitumen, and the uranium industry. At present, there is no production and technical base in the energy field, and no decision has as yet been reached about it.

The basic directions of the economic and social development of Czechoslovakia for 1981-1985, as stated by the 16th Congress of the CZCP, include the task of intensifying the economy and increasing the effectiveness and quality of all work by imparting effective structural changes, mainly on the basis of accelerating and making maximum use of the results of scientific and technological developments and improvements in the control of the national economy.

The intensification factors as a whole represent a broad and inter-related complex of factors among which the task of science and technology has a predominant role to play given the situation in the fuel and energy sector. Applied electronics, as one of the intensification factors, is part of a unified scientific and technological policy for the fuel and energy fields. In response to the above, the fuel and energy fields worked out a program for the application of electronics, and measures were approved for personnel, organizational, financial and supply arrangements ensuring fulfillment of the plans for electronic enhancements in this field of endeavor.

12993

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CZECHOSLOVAKIA

## POSSIBILITY FOR INCREASING RELIABILITY OF POWER BLOCKS SEEN

Prague AUTOMATIZACE in Czech No 5, 1985 pp 115-117

[Article by Otokar Randak, SKODA Power Plant Construction Enterprise, Prague: "Concept of the Control of a Power Block from the Standpoint of Increasing Operational Reliability"]

[Text] The article addresses the possibilities of using new technology in the field of electronics for purposes of increasing the operational reliability of power blocks.

Key words: The control and operation system, diagnostics, accuracy of information, the structure of the control system, the operator work station, micro-processor, superprotection, safe shutdowns.

### 1. Introduction

If we analyze the influence of the control and operation system (COS) on the reliability of the power block on the basis of experiences in our power plants with 200 MW blocks and a 500 MW block and on the basis of the present capabilities of the parts base for COS, it becomes possible to identify the following as being significant problems that have an impact on the reliability of operation:

- sensors and the quality of their information;
- the protection system;
- the structure of the control system; and
- the operator's workstation.

The reliability of the actual electronic equipment making up our control and operation systems already at such a level that it plays a minimal role in the failure rate of the power block.

## Sensors and the quality of their information

Incorrect information about the parameters is the most common cause of power block failures. That is why the accuracy of information must be monitored constantly, from its origination to its evaluation. The factors which influence the quality of information pertinent to the control and operation system are as follows:

- the source of information: the sensor;
- verification of the correctness of the information: diagnostics;
- adjustment of the signal for information transmission;
- preparation of the signal for various usages (measuring, regulation, protection, control, etc.); and
- the processing of information, including the form in which it is communicated to the operational personnel.

## Sensors

By choosing the correct type and placement of the sensor, it is possible to influence its reliability, but it is possible only partially to limit the unfavorable influences of the environment (humidity, vibration, impacts, etc.) which are the causes of relatively frequent failures of sensing units, which of course causes false information to be received. That is why it is necessary constantly to verify the quality of the information transmitted by the sensing unit.

## Correctness of Information

Microprocessor technology makes possible extremely reliable and inexpensive diagnosis of signals emitted by the sensing unit, and evaluates whether the information is within the range of correctness. The test results used in the course of operating the Chvaletice power plant using the electronic monitoring unit prove that, in the case of those parameters which are so important that it was necessary to provide for input from three parallel sensors, where a choice was possible better results were obtained by using of two sensors with together with a diagnostic system equipped with a microprocessor. The advantage of the system is significant when we consider a failure of one sensor when information gathering is still under way and the danger of a total shutdown of the technological equipment because of a fault, or a so-called safe failure, is limited to a minimum.

## Adjustment and Distribution of the Signal

To transmit a millivolt signal from the operational station to the monitoring point is demanding because the signal is susceptible to inductive interference from the parallel power cables. For a signal to be transmitted reliably, it must be in the range of 4 to 20 mA. Current technology makes it possible to manufacture converters which can be placed into operation near the sensors and which will ensure conversion

to a uniform signal of 4 to 20 mA. It is also advisable to distribute the signal and provide galvanic separation on the spot. Optoelectronic elements, also outgrowths of the new technology, are also used.

### Safety Systems

When dealing with solutions for the safety system it is necessary to pay maximum attention to the elimination of safe failures, but this should not be done at the expense of the safety of technological equipment. Combining the above-mentioned diagnostics system with a microprocessor and simple hardware evaluation software, a highly reliable safety system was formed. This system, known as SUPEROCHRONA [Super-safety], entails two direct and independent transmission paths, and works with information from two parallel sensors.

When both sensors provide compatible information calling for a shutdown of power, both the microprocessor and the hardware issue an automatic instruction to the safety system.

In the event that only one sensor provides such information to the safety system, the hardware side will wait from 0.5 seconds (in the case of pressures) to 4 seconds (in the case of temperatures) for the microprocessor to evaluate the accuracy of the reading; if, during this time, the microprocessor does not provide a negative reply, the order to activate the safety system is given.

This is just a brief overview of the functioning of SUPEROCHRONA. A detailed description of its operation is outside the scope of this article.

### Structure of a Control System

Microprocessors make it possible to have basic control and regulation circuits within small units that are separated galvanically. As a result, it is possible to structure the control system as a consequence in accordance with the hierarchy of control levels (following the level of the functional groups) and to partition it horizontally into individual functional units and groups. It is possible to devise a control system that would be highly resistant to failures by monitoring internal functions and external connections using diagnostic programs. Actual failures within a system are limited to one unit controlled by the microprocessor of a corresponding horizontal level. The architecture of a structure can be designed in such a way that failures of the actual control and operation system which do not demand the shutdown of the entire block would be solved by a system automatically in such a way that there would be at least some lapse of time giving the personnel the opportunity to orient themselves and make decisions. At higher operational levels, it is possible to use a minicomputer or possibly a larger computer as a central coordination system.



The development and manufacture of electronic parts, including microprocessors, have advanced to such a degree that it is possible to make kits and systems that are sufficiently resistant to environmental conditions that they can be placed directly in the work area.

In the past, semiconductor kits and minicomputers had to be placed in air-conditioned areas in the immediate vicinity of a temperature observation unit. All the information (signals) from the operation had to be transferred into this area. In the case of massive power blocks, the length of the cables reached a level where they could not longer carry the signals efficiently. The central cable paths are extremely demanding in terms of space, and the cables are highly susceptible to damage. Repair of these cables is highly demanding in terms of technology and time. Modern technology makes it possible to deal with the control system problem on the level of a basic control of a functional unit, establishing it as a satellite distributor with an IP 56 cover to protect against water spray and placing it directly adjacent to the technological equipment it monitors.

#### Advantages:

- less need for temperature-controlled areas;
- fewer cable requirements in the area of the sensing unit (sensors, position switches) of the automated unit;
- basic control unit incorporated into the technological equipment (significant especially in the case of export orders--as warranty protection is provided);
- easier debugging with automated technological equipment;
- the ability of a functional unit to be put into operation without being dependent on a temperature observation (again significant for export);
- increased operational reliability. In the case of the breakdown of the chief system in the observation unit or a damage of a central wiring path, it is possible to make the technological equipment take up the slack and possibly even control it manually from a local control panel.

These satellite control panels can be connected with the observation unit can be done in the following way:

- in a star pattern--each control panel is connected with the monitoring point by two parallel cables (each cable has a different route to increase reliability);
- in a loop pattern--a double BUS.

For the safety and control circuits, a star-pattern cable system is used (BUS with serial transmission of information and instructions is much more damage-prone in the operational area and does not have the required level of reliability for these circuits.

## Operator Work Station

Modern technology has brought new factors into play in the communication of information between an operator and the operational process.

The major such factors are as follows:

- screen displays; and
- terminal keyboards.

A combination of these new elements with classic display and recording instruments, light transparencies and keys, presents many possibilities for solving the problems of operator work stations.

Because of the high volume of information, the temperature observation units of our 200 MW blocks and the 500 MW block in the electron microprobe analysis III (EMA III) have reached the limits of how much a single human can absorb and react to during a full working day.

Because the screen concentrates information in a small area, it cannot but increase the demands on the operator. The different manners in which information can be shown on a screen, particularly on color screens (columnar information, multicolored diagrams, alphanumeric codes, graphs of the behavior of the criterion being observed, etc.) tend to make the operator concentrate on one aspect while the factors which not reflected in the main information are still an important part of the overall framework.

Solving the problems of the operator's work place is becoming a new field that demands the close cooperation of technologists and ergonomists. This area has yet to receive the attention that it needs because, despite the fact that this is the currently most critical area in terms of failures and other problems. The human operator as a component of the control system is now the source of the most serious disruptions. However, the reason for this cannot be just the lack of attention or lack of reaction. A human has limited possibilities for the receipt and evaluation of information, and even these maxima are limited by the number of hours during which a person is capable of reliably fulfilling the task demanded of him. Responsibility for the reliability of an operator lies also with the designer of the monitoring unit, who must provide the operator with conditions such that he can reliably control the block even under extraordinary conditions.

These problems, however, demand separate analysis which is outside the scope of this article, which serves merely to point to the problem as a significant aspect that has a decisive impact on the operational reliability of the power block.

## Principles of the Solution of the Control and Operation System

The foregoing brief analysis of the problems of increasing the reliability of the control and operation system of a power block suggests that the following principles would apply to a conceptual solution that would correspond to our present technical possibilities:

Come to terms with the fact that the failure rate of sensors will not change in the near future. Concentrate on the ways of evaluating the quality and accuracy of the information from the sensors, using diagnostic methods. Ensure a secure transmission of information to where it is used. A good solution for the future is to process the signal at a point situated as close to the sensor as possible. The transmission signal should be adjusted to 4-20 MA and be distributed using galvanic separation for various types of utilization (safety, automatic machines, regulatory machines, etc.).

The safety systems should be designed in such a way that the path from the information requiring action is as direct as possible; for safety reasons, it should be doubled and should not be overridable by the operator or disrupted by possible failure of the control system, and the safety systems should be constantly checked by a diagnostics system. Internal failures of a system must be localized to the smallest possible area and thereby immediately identified.

The control system should be divided into small elements, which will make internal and external diagnostics possible when the system is equipped to use microprocessor technology. The inclusion of automatic machines of the operational units with autonomous safety systems within the range of a basic control system should be understood to be an integral part of outfitting the technological equipment. The placement of these automatic machines directly into operational areas must be a matter of course in the future.

Increased attention should be paid to the design of the monitoring unit, above all to the manner in which the operator is connected to the processor as regards the utilization of modern technology. Design of the operator's work station should be carried out in close cooperation with the Department of Ergonomics of the Research Institute for Work Safety.

### Conclusion

Questions on the conceptual approach to control and operation systems in connection with efforts to increase the operational reliability of a power block are extremely topical in connection with the new generation of nuclear power plants in Czechoslovakia, and with the highly efficient power blocks incorporated in major overhauls of conventional power blocks of classical 110 MW and 200 MW units.

12993

CSO: 2400/530

1 October 1985

## CZECHOSLOVAKIA

## BRIEFS

SOVIET COMPUTERS--The 200th computer of the SM series supplied by the Soviet Ministry of Instrument Making, Automation Equipment, and Control Systems was put into operation in Jindrichuv Hradec. It is installed in the enterprise for rationalization, management, and computer technology of the Czech Ministry of Agriculture and Food in Jindrichuv Hradec. By the end of the year, they will receive two more of these minicomputers from the Soviet Union, which are proving themselves here in evaluating data, in management of enterprises and technological processes, and in teaching. The workers of the Jindrichuv Hradec branch enterprise analyze statistical economic information for all unified agricultural cooperatives and farms in the South Bohemian Region. A contract was also signed today between the foreign trade enterprise Kovo and Elorg of Moscow for deliveries of more computers to Czechoslovakia. [Excerpts] [Prague Television Service in Czech and Slovak 1730 GMT 5 Sep 85 LD]

NUCLEAR PLANT REACHES CAPACITY--The Dukovany nuclear power station first block is entering the 5th month of test operation. It has reached 100 percent of production capacity and supplies 428 megawatts to the energy grid. The construction of the second block is nearing completion and workers have undertaken a socialist pledge to complete it according to plan. [Summary] [Prague Television Service in Czech and Slovak 1730 GMT 5 Sep 85 LD]

CSO: 2400/589



HUNGARY

MAROTHY FORESEES ECONOMIC DIFFICULTIES

Budapest MAGYAR HIRLAP in Hungarian 18 Aug 85 p 3

[Interview with Dr Laszlo Marothy, deputy chairman of the Council of Ministers, by Dezso Pinter: "Country Construction--Under Difficult Circumstances"]

[Text] When the government reviewed on 1 August the economic developments in the first half of the year, it established that this year's national economic plan was being realized under unexpectedly difficult circumstances. Our colleague presented a few questions concerning some lessons of the first 6 months, the most important tasks of the period ahead and the question of realizing the plan goals to Dr Laszlo Marothy, a member of the Political Committee of the MSZMP and deputy chairman of the Council of Ministers.

[Question] Even in June, when we talked about this interview, you mentioned that by 20 August it would be possible to see, by and large, to what extent the country had "gone on leave" in the summer months. In general, what did this summer bring and where did it fail to deliver?

[Answer] We have prepared various accounts about the events and results of recent weeks. The foreign policy record is, in my judgment, active and does not at all bear the signs characteristic of the "silly season". On the occasion of the tenth anniversary of the signing of the Helsinki agreement the foreign ministers of 33 European countries and of the United States of America and Canada met in the Finnish capital and important bilateral talks have been held as well. The Moscow rally of the youth of the world also called attention to the conduct of a responsible policy which takes into consideration the real situation. At the same time here at home preparations for the Budapest cultural forum in the fall have kept our foreign policy people and cultural representatives busy.

The new summer months which aroused greatest attention was the announcement of a Gorbachev-Reagan meeting, which offers an opportunity to clarify matters in a tense and contradictory international situation.

As for the domestic policy score even the beginning of summer brought an important event--the June election was an outstanding station in the further expansion of democracy. At the elections the voters expressed their agreement

with the most important national and international goals developed at the 13th party congress.

The economic accounting is still at an intermediate stage. Despite the summer vacations the national economy achievements in June and July were somewhat better compared with the beginning of the year. These can be appreciated, however, only if they are further intensified in the remaining part of the year and counter the unfavorable phenomena of the earlier period.

Industrial production in the first half of the year finally reached the level of last year. This is due to the fact that the volume of production increased in the machine industry, pharmaceutical industry and in the energy producing branches--except for coal mining and natural gas production--while it decreased in metallurgy, construction industry, light industry and the foodstuffs industry.

In the construction industry the larger part of the shortfalls caused by the severe winter have been made up and there is hope that with additional significant effort the year's production will approach that of last year.

In agriculture the crop production especially suffered from the vagaries of the weather. With organizational work the majority of the farms made up for the forced delay in spring planting. We are approaching the end of the cereal grain harvest. Our wheat crop is good, but it did not justify the hopes prior to harvesting. The stock of animals decreased further--primarily the number of cattle and hogs.

There has been little improvement in foreign trade. According to the half-year data export is expanding more moderately than planned while import is expanding more rapidly than anticipated.

The tourist season is still on. More foreigners than last year visited our country, but all this cannot be felt in the receipts of tourism thus far.

The government surveyed the status of the national economy and indicated what is to be done. In addition to doing these things without fail--and they include a number of government tasks as well--it is absolutely necessary to increase the activity of the enterprises. Every economic organization must strive to develop production and sales, to reduce expenditures, to discover new markets and to better exploit the possibilities.

#### Larger Tasks Can Be Solved By Exploiting Our Reserves

[Question] Can you predict whether the economic conditions which have developed thus far will change any in the latter part of the year?

[Answer] No fundamental changes--particularly no let-up--can be expected in the conditions for economic construction. We must continue working under hard, strict conditions. But it is our judgment that by exploiting our existing reserves, primarily in the area of production but also in foreign trade and in the infrastructure, the major tasks can be solved. The government

will continue to offer direct and indirect aid in order to bring the reserves to the surface as quickly as possible.

[Question] Obviously the performance of the economy this year will have an effect on the working out of the Seventh 5-Year Plan. According to the resolution of the party congress the plan must be a program for "well founded economic development at a faster pace." Will the results expected for 1985 contribute in sufficient measure to starting this program?

[Answer] In recent years it has happened a number of times that economic development in the second half of the year has deviated substantially from that of the first half, with results improving a good bit. This could happen again. There are more than 4 months left and we must make sure--with goal-oriented economic organization and guidance--that the 1985 development as closely as possible approximates what was planned.

We can expect to see forecasts about the fulfillment of the annual plan. Not all of these are optimistic. Still, instead of outlining the forecasts, I would say that much can still be done to reach the plan goals and now we must attend to these tasks and work to see that we lay a better than ever foundation for the Seventh 5-Year Plan. The shortfalls in fulfilling the 1985 plan could burden the first half of the Seventh 5-Year Plan, but our congress goals are unchanged. The preparatory work on the plan is being carried out with great responsibility so as to provide this foundation.

[Question] In recent years the Council of Ministers has contributed with important decrees and resolutions in order to further develop the economic guidance system, to modernize the regulators and the organizational system. How can we expect the government to continue this activity?

[Answer] An analysis of the operation of the economic guidance system will continue to receive a primary role in the work of the Council of Ministers and the necessary changes and modifications will be decided on the basis of this. We are now studying, for example, the interest of the enterprises in socialist export and we have worked out proposals to strengthen this. We are also analyzing a taxation system that would regulate developmental purchasing power.

In connection with a further development of the guidance system we are dealing with the preparation of new changes to be introduced in 1987-1988. Among other things we are planning to start a new phase in the development of the banking system, a modification of enterprise and personal income taxes; and this does not end the list either. Our goal is to debate the various proposals, to make real decisions this year, and on the basis of these to be able to develop appropriate concrete models.

#### Council Plan Concept Attitudes Developed

[Question] The independence of the councils and their interest in management are increasing further. In your judgment, to what extent are the councils prepared for this?

[Answer] I am convinced that the existing council apparatus and the newly elected council members--who were faced with decisions involving heavy responsibilities during the first months in the jobs they were elected to do together with the increased local independence--have done everything to prepare themselves and that they will be able to meet the new requirements. Indeed, all of them consciously undertook this service. Because we are talking about service, whether a person is taking care of local matters, thus matters affecting people most directly perhaps, professionally or in social work.

But the central intent that the tools absolutely necessary for basic human services should be at the disposal of the local councils can attain its goal only by gaining people's confidence, by achieving greater participation in solving local problems--this goal is that local decisions should have a greater role in human services, in involving the entire life of the people.

And to this extent I feel that the question is a just one. It would be an illusion to believe that the councils will get more money automatically by virtue of the new management conditions. This is not what is involved. What is involved is that they themselves can decide where to use the assets at their disposal. When giving preliminary opinions on the plan concept and then when approving the plan the council members must make responsible decisions which will have an effect for 5 years on the development possibilities of a given settlement. I feel that I can say without exaggeration that this is the true field for the unfolding of the popular representational self-government character of the councils, for the recognition of the economic interests of the people and for the realization of these interests by virtue of representative democracy.

As for the local ideas now being developed, it is my opinion that that council is making good use of the possibilities given by independence which concentrates its efforts and assets on the proper functioning of the existing institutional network, on completion of the investments and renovations under way and on the primary goals for development (housing, drinking water, education and health). This attitude is characteristic of most council plan concepts being prepared.

Becoming acquainted with good experiences and bringing up the real problems can help much in realizing the new requirements. The various media can cooperate usefully in this. Your paper, MAGYAR HIRLAP, as an organ dealing regularly with the questions of council work, can play an especially important role.

#### Role of Science in Society, Economy

[Question] Science is playing a greater role than ever before in formulating and carrying out social and economic tasks. This has been confirmed by a number of significant political forums. Am I mistaken if I sense a certain degree of impatience in these statements as well?

[Answer] Even before this increasing tasks have been handed on to science in the course of our social development. Let us only think of those results which provided a foundation for government decisions in the areas of the economic



guidance system reform, social policy and settlement development. And one should mention the research in the areas of crop improvement and animal husbandry which helped our agriculture reach the international front ranks, or the research which laid the foundations for some of our economic development programs in industry.

No one now disputes the fact that we could not progress in a single area of life if we did not make use of scientific achievements. Indeed--as international experiences prove--the more an area relies on science the faster its development.

But taking into consideration the available material and intellectual resources it is obviously necessary to rank order the tasks of scientific research. It is self-evident that we must concentrate on the most promising areas, or on the most important questions from the viewpoint of the development of science, posing higher requirements for scientific accomplishment as well.

The National Medium-Range Research and Development Plan now being prepared and running up to 1990 will outline the most important tasks in this area. It is the goal of the government to create conditions for a realistic but at the same time aggressive science policy--taking into consideration the difficult situation which has developed in recent years at the research sites and the increasing socio-economic role of science. First of all there is a need to increase the quality of scientific work and to encourage the practical utilization of the results achieved.

In the future we must make science into a dynamic factor of our socio-economic development. In connection with this, increasing tasks will fall on the enterprises, farms and institutions using the achievements of science. At the same time the scientists and researchers must see clearly that in many cases they are expected to provide practical answers to the current problems--and as quickly as possible. We can achieve real progress in this area only by moving forward together, keeping the common goals and tasks in view, paying attention to the promises of tomorrow and laying the foundations for the day after tomorrow.

#### **Electors, Elected More Closely Linked**

[Question] This interview will appear before the holiday of our constitution. You are a member of a legislative body, a National Assembly representative. The election this year, in June, was different from earlier ones.

[Answer] In the June elections we voted responsibly for a policy based on common consent and enjoying the support of the crucial majority of society. It is a great honor for me that for the next 5 years I can represent in the National Assembly the land of my birth, the city and environs of Szeghalom. Like my representative colleagues I feel that the trust in possession of which we can start our activity will facilitate our work and make it more varied, in any case this trust is an obligation. Probably the electors will watch the activity of the elected with greater attention than before. And I trust that the increased public life activity which characterized the election period

will not decrease. A better harmonization of national and local interests does not promise to be easy in the future either. One of the most important tasks of every representative in the period ahead will be to take a stand in the affairs of the country while seeing clearly the problems and needs of his electoral district.

But it may make our work easier that, hopefully, the connection between the electors and the elected will be closer and less formal. The meetings taking place in the meantime may become more substantive if they are characterized not only by the fact that they call us to account but that increasingly they become forums where valid proposals and initiatives which shape our thinking can be voiced.

[Question] Thank you for the interview.

8984

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HUNGARY

UNTRACEABLE INCOMES FOIL TAX AUTHORITIES

Budapest OTLET in Hungarian 27 Jun 85 pp 14-15

[Article by Z.B.: "What the Statistics Do Not Show: 'It is Conceivable that the Highest Incomes Remain Entirely Untouched by Taxation'"]

[Text] Attached to this article, the esteemed reader can find and peruse the numbers of a rarely published statistical table. He can find out how many extremely well-paid private craftsmen, merchants, and intellectuals live in the capital city, according to the records of the tax authorities, broken down into categories by 100,000 forints.

Unfortunately, our statistics are not the same as reality, only its "heavenly" reflection: the recording authorities themselves do not believe that the freely acknowledged--or officially assigned--taxable incomes even approximately correspond to real incomes. Still, the only available statistics for determining or estimating the number of individuals earning extremely high incomes can be derived from the annual tax levies, even if they are only of relative accuracy. Below, we have summarized the five main reasons for the inability of our present taxation system to fulfill its function.

--The creation of tax-associations favors the development of alliances based on interest.

As of 1 January 1984, the task of determining the tax bases was transferred from the primary authorities to the apparatuses of the so-called tax associations which belong to the National Organization of Artisans (KIOSZ) and the National Free Organization of Retailers (KISOSZ); since that date the authorities' job is merely to supervise and document. This promotes the activities of secret alliances based on interest--one might say clans--because the determination of the tax bases can be considered a serious financial "weapon." It is widely known that, though difficult to prove, such alliances have been operating for years among the private merchants--suffice it to mention the "vegetable mafias"--which have always been controlled by the highest-earning merchants holding the most capital, who always succeeded in having their tax bases reduced. The creation of tax associations seems to exacerbate this situation; the detection--and taxation--of extremely high incomes becomes even more difficult.

--Careless documentation also favors tax evasion.

The validity of tax bases, even among small craftsmen working on public contracts, is made even less accessible by the estimates, according to which the managing organizations simply forget to send as much as one-quarter of the data to the authorities. The only significant survey relevant to this topic was conducted by the Central People's Control Committee (Kozponti Nepi Ellenorzo Bizottsag). This was limited to organizations having their own budgets; thus, it is not surprising that, according to the survey's findings, cultural institutions and organs of local councils are the primary culprits who fail to forward data. For the 2-year period covered by the survey, 4 million forints in back taxes were levied in Budapest alone, but even in this way we are not convinced that all deficits have been discovered. This survey was a one-time measure: for example, the cultural administrators who hire occasional performers for their evenings of entertainment continue to be lax in the documentation of payment to these artists. The situation cannot be altered by decrees and control measures, as long as there is no real fiscal discipline in the management of the enterprises and the accounts of budgetary organs.

--When working for private commissions, the craftsmen and merchants report as much of their income as they want to.

Exceptions could be those craftsmen who make itemizable products, or those who work only for public commissions. If a well-known, sought-after downtown tailor reports an income of 80,000 forints a year, the authorities can double his tax base. In that case, however, the tailor simply appeals the decision, it is very difficult to prove the opposite of his claim. The authorities can only harass him with audits, monitor his business and take frequent inventories, but there are not enough personnel for this. Of course, in principle there is such a thing as an examination of wealth accumulation, in the course of which they can go back as far as 10 years and check the individual's wages, total income and inheritance, comparing these with his present wealth in order to determine if he paid the proper amount in taxes. In order to perform such examinations, however, a larger staff, better prepared tax examiners and more investigative work are required. For several years there were only a few instances of such wealth accumulation examinations (none this year). In 1983, at the insistence of the Ministry of Finances, there were 20-25 such examinations in Budapest: only 10 percent of them proved successful.

--What can the authorities do?

At this time there are 79 tax investigators working in Budapest. Nearly all of them are women, thus extended child-care leaves and frequent illnesses reduce this number further. With mid-level qualifications, their average wages are around 4,500 forints. Their bonuses are not sufficient to be real incentives. They are allowed to earn only 30,000 forints a year, but it is nearly impossible to reach that level. Even though the upper limit of their bonuses was recently raised, the councils still cannot pay enough for anyone to undertake the unpopular tasks of the job. (The investigators have to work on Sundays and in the evenings, too, and they have to hide in doorways to photograph in order to document actual traffic, etc.) There is a high rate of



Table 1. The Levying of the General Income Taxes, and the Electronic Processing of the Data Has Been Completed. The Most Characteristic Traits of Taxes Paid by Private Craftsmen and Merchants:

(Title)			
Az általános jövedelemadó 1985. évi kivetése, illetőleg az adatok elektronikus feldolgozása befejeződött. A kisiparosok és magánkereskedők adóztatásának jellemzőbb adatai:			
Létszám (ezer fő) (1)	1984	1985	1984 = 100
<b>a) Kisiparosok: (2)</b>			
Adófizető: (3)	91,9	104,4	113,6
Adómentes: (4)	31,1	24,2	77,8
Összes adózó: (5)	123,0	128,6	104,6
Alkalmazott: (6)	16,3	13,8	84,7
Ipari tanuló: (7)	3,5	3,4	97,1
Segítő családtag: (8)	4,8	5,2	108,3
Összesen: (9)	24,6	22,4	91,1
<b>b) Magánkereskedők: (10)</b>			
Adófizető: (11)	13,4	17,6	131,3
Adómentes: (12)	5,2	3,4	65,4
Összes adózó: (13)	18,6	21,0	112,9
Alkalmazott: (14)	2,3	2,1	91,3
Ipari tanuló: (15)	—	—	—
Segítő családtag: (16)	4,3	3,5	81,4
Összesen: (9)	6,7	5,6	83,6

Key:

1. Number of Individuals (1,000)	12. Tax Exempt	22. Net Tax Base per Capita (forints)	28. Net Tax Base
2. Private Craftsmen	13. Total Taxpayers	23. Advance Tax + Lump Sum per Taxpayer (forints)	29. Net Tax Base per Capita (forints)
3. Taxpayers	14. Employed	24. Total Tax Burden per Taxpayer (forints)	30. Advance Tax + Lump Sum per Taxpayer (forints)
4. Tax Exempt	15. Apprentice	25. Private Merchants (forints)	31. Total Tax Burden per Taxpayer (forints)
5. Total Taxpayers	16. Family Member Assisting Taxes Levied (in million forints)	26. Income (Tax Base) Tax Base Reduction Allowance	
6. Employee	17. Taxes Levied (in million forints)	27. Tax Base Reduction Allowance	
7. Apprentice	18. Private Craftsmen		
8. Family Member Assisting	19. Income (Tax Base)		
9. Total	20. Tax Base Reduction Allowance		
10. Private Merchants	21. Net Tax Base		
11. Taxpayers			

Table 2.

Key:

1. 1985 Tax Advances (Lump Sum); Per Taxable Income Categories
2. Taxable Income Categories
3. Total Number of Taxpayers
4. Private Craftsmen
5. Determined Taxable Income (1,000 forints)
6. Gross Tax (1,000 forints)
7. Net Tax (1,000 forints)
8. Average Net Tax (forints)
9. Those Paying Advance Tax (from...to...)
10. Those paying Lump Sum Tax (from...to...)
11. Total Taxpayers (from...to...)
12. Total
13. Private Merchants

1985. évi adóelőleg (átalány) adóköteles jövedelemszövevény (1)					
(4) KISIPAROSOK					
(2) Adóköteles jövedelemszövevény Ft	(3) Teljes létszám fő	(5) Megáll. Adóköteles jövedelem ezer Ft	(6) Bruttó adó ezer Ft	(7) Nettó adó ezer Ft	(8) Átlag nettó adó Ft
Adóelőleg fizetők (9)					
48 000 Ft-ig	26 894	742 105	14 559	14 450	538
48 001—60 000	7 146	400 707	17 688	17 063	2 472
60 001—80 000	7 380	534 860	39 110	38 355	5 197
80 001—100 000	6 301	504 571	63 079	62 109	9 857
100 001—150 000	8 091	1 016 534	169 403	167 196	20 643
150 001—200 000	3 908	691 299	135 827	134 624	39 586
200 001—400 000	3 565	974 229	297 207	295 848	82 987
400 001—600 000	577	279 559	110 612	110 416	191 363
600 001—900 000	143	104 934	48 624	48 600	335 174
900 000 felett	81	117 008	60 377	60 325	744 755
<b>Összesen (12)</b>	<b>64 076</b>	<b>3 443 730</b>	<b>976 690</b>	<b>969 579</b>	<b>15 132</b>
Átalányfizetők (10)					
48 000 Ft-ig	29 466	839 554	23 197	22 755	800
48 001—60 000	9 456	520 090	27 966	27 402	2 998
60 001—80 000	10 216	734 431	58 383	56 845	5 564
80 001—100 000	7 548	689 388	73 689	72 211	9 567
100 001—150 000	8 272	1 006 351	163 053	161 721	19 550
150 001—200 000	521	89 305	19 925	19 679	11 775
200 001—400 000	100	23 428	7 189	7 152	71 527
400 001—600 000	4	1 976	380	380	95 245
600 001—900 000	0	0	0	0	0
900 000 felett	0	0	0	0	0
<b>Összesen</b>	<b>64 583</b>	<b>3 908 583</b>	<b>373 786</b>	<b>368 169</b>	<b>5 701</b>
Összes adózó (11)					
48 000 Ft-ig	55 350	1 581 659	37 716	37 226	673
48 001—60 000	16 602	920 797	45 855	45 065	2 714
60 001—80 000	17 596	1 269 231	97 493	95 200	5 410
80 001—100 000	13 849	1 273 957	136 769	134 321	9 699
100 001—150 000	16 363	2 022 883	332 456	328 907	20 101
150 001—200 000	4 427	780 665	175 712	174 304	39 373
200 001—400 000	3 665	999 657	304 397	303 001	82 674
400 001—600 000	581	281 536	110 993	110 797	190 701
600 001—900 000	145	104 934	48 624	48 600	335 174
900 000 felett	81	117 008	60 377	60 325	744 755
<b>Összesen</b>	<b>129 659</b>	<b>9 352 333</b>	<b>1 350 477</b>	<b>1 337 748</b>	<b>10 598</b>
KISKERESKEDŐK (13)					
Adóelőleg fizetők (9)					
48 000 Ft-ig	2 422	76 892	1 521	1 521	628
48 001—60 000	1 746	102 877	4 609	4 609	2 610
60 001—80 000	2 240	166 903	11 120	11 117	4 965
80 001—100 000	1 895	176 180	18 883	18 883	10 144
100 001—150 000	2 234	283 757	47 927	47 921	21 451
150 001—200 000	889	157 436	35 434	35 822	40 295
200 001—400 000	578	151 903	46 102	46 087	79 738
400 001—600 000	50	24 195	9 996	9 996	199 054
600 001—900 000	15	10 816	5 221	5 218	347 924
900 000 felett	8	15 212	8 924	8 924	1 115 540
<b>Összesen (12)</b>	<b>12 087</b>	<b>1 145 377</b>	<b>190 143</b>	<b>190 104</b>	<b>15 728</b>
Átalányfizetők (10)					
48 000 Ft-ig	1 572	55 681	1 044	1 044	664
48 001—60 000	1 405	80 321	3 570	3 570	2 519
60 001—80 000	1 890	138 682	10 028	10 028	5 114
80 001—100 000	1 730	161 559	16 903	16 903	9 771
100 001—150 000	1 819	229 005	37 300	37 297	20 505
150 001—200 000	428	74 609	16 728	16 728	39 270
200 001—400 000	83	20 389	5 924	5 918	71 306
400 001—600 000	4	1 960	185	186	46 400
600 001—900 000	0	0	0	0	0
900 000 felett	0	0	0	0	0
<b>Összesen (12)</b>	<b>8 919</b>	<b>762 349</b>	<b>91 655</b>	<b>91 646</b>	<b>10 275</b>
Összes adózó (11)					
48 000 Ft-ig	3 994	132 574	2 566	2 566	642
48 001—60 000	3 171	183 199	8 149	8 149	2 570
60 001—80 000	4 120	305 186	21 148	21 145	5 152
80 001—100 000	3 615	337 780	35 787	35 787	9 940
100 001—150 000	4 053	512 762	85 228	85 219	21 026
150 001—200 000	1 315	212 045	52 563	52 551	39 963
200 001—400 000	661	171 892	52 026	52 005	78 677
400 001—600 000	54	24 155	10 182	10 182	197 561
600 001—900 000	15	10 816	5 221	5 218	347 924
900 000 felett	8	15 212	8 924	8 924	1 115 540
<b>Összesen (12)</b>	<b>21 086</b>	<b>1 927 627</b>	<b>281 798</b>	<b>281 790</b>	<b>11 413</b>

turnover among staff members; most of them know the relevant regulations but have neither theoretical nor practical familiarity with the trades they investigate.

--It is conceivable that the highest incomes remain entirely untouched by taxation, since they derive from secret activities.

These hidden transactions--originating in tipping, corruption, medical "gratitude-payments," or the fencing of stolen goods--do not appear as open economic activities; thus, there are no taxes paid in connection with them. Therefore, inasmuch as the state judges all incomes deriving from the second, third and first economies on an equal basis (the general income tax), then it will be disproportionately harsh on those who do not take advantage of the opportunities offered by the second economy. Incomes generated by the first economy are more or less precisely documentable--and thus taxable--which, by definition, is not true concerning the second economy, said sociologist Zsuzsa Ferge in one of her studies. Under the present conditions, a unified and general system of taxation, which would judge wages and other hidden incomes on an equal basis, would burden primarily those whose incomes are reportable, i.e., those who are honest, or those who do not have the opportunities to participate in the activities of the second economy.

12,588  
CSO: 2500/482

HUNGARY

WAGE EGALITARIANISM ALIEN TO MARX

Budapest OTLET in Hungarian 27 Jun 85 p 12

[Interview with Dr Gyula Lakatos, sociologist, university docent of the HSWP's Political Higher School, by Z.B.: "Illusions Viewed From Below; New Heroic Myths Substituted for Material Incentives"]

[Text] [Question] The principle of egalitarianism conflicts with everyday practice. What else can we say when on the way home from work on the bus we can read on advertisement of a villa, with swimming pool and indoor tennis court for sale for 3.5 million forints?

[Answer] First of all, let us clear up a misunderstanding that has prevailed for a long time. The classics of Marxism-Leninism--I am thinking primarily of the works of Marx and Engels--had no intention of talking about equality. Marx, in particular, was loathe to go into prophecies concerning the future (wealth) conditions of socialism. In this respect his theoretical principle is basic: in socialism distribution according to work is the main criterion. This does not mean equality, but rather that capitalistic inequality based on exploitation is replaced by an inequality based on work. In other words, the differences in our incomes--and consequently in our wealth--are caused by the different evaluations placed by society on different functions, and on the different abilities of individuals. Independent of this, however, certain theoretically unsophisticated layers of workers' movement have cultivated concepts of equality inherited from the last century, which depict socialism as entirely free of inequality and reminiscent of the land of milk and honey. These are mistaken illusions, completely alien to the classics of Marxism.

[Question] Still, they managed to survive...

[Answer] ...And they continue to be influential even today. Due to political considerations, during the 1930's in the Soviet Union and subsequently around the late 1940's and the early 1970's in the Eastern European socialist countries, the harmony between societal ideals and wealth was lost. The mottoes of the period--equality, right to work, existential security, continuously rising standards of living, etc--did not take into consideration the actual possibilities of the economy. During the Rakosi period the leadership took it for granted that since they had acquired political power, in economy they could also do as they wished. The sky is the limit they thought, and accordingly, they proclaimed principles completely removed from reality. Declared



societal values were enlisted in the service of politics and forced industrialization: in the world of direct economic commands they substituted slogans for material incentives and heroic myths (the Stakhanovite movement) for economic stimulation.

[Question] Would you blame the events of 3 decades ago for the tensions created by wealth differences in today's society?

[Answer] Yes, I would, because, after all, just as it was a mistake during the 1950's to believe that by laying the foundations of a new society people's moral consciousness would suddenly change, it would also be a mistake to think that the ideals of the early periods of socialism have disappeared without a trace. After all, the slogans "equality," "existential security," or "rising standards of living" have expressed the desires of a great many people. Not long ago I gave a lecture at one of the Budapest enterprises, where I openly revealed some of the ills of our economy. To my surprise, most of the people who commented after the lecture were not interested in the concrete worries and the factors that influence the development of our standard of living; instead, they asked me about abstract ideals. The struggle between economic rationalism and false morality (unfounded societal goals) has influenced the history of the past 35 years: it would take a separate essay to depict that conflict. This same morality opposed and tried to put a stop to the economic reform of 1968; we all know the arguments that tried, without any reason, to pit against each other the "factory worker" on the one hand and the peasant cultivating his small household parcel, the intellectual labelled as unproductive, the "price-gourging" merchant on the other hand. Of course, the same anti-reformers were also the ones creating the figure of the "migrating bird," negatively labelling with it those workers who--in accordance with their elemental interests--as well as, now we can say this, the interest of national economy--utilized their laboring energy where it earned them the highest income. (All of this went hand in glove with the general condemnation of materialism and the efforts to insure private profit.) The use of "moral playing cards" endangered the fate of reforms.

[Question] In that case, to put it quite bluntly, what you are suggesting is let us forget our principles and our morality, and let us take on a dog-eat-dog, nothing else matters attitude.

[Answer] That is not what I said. I only said that whenever we have based everything on principles instead of on the actual state of the economy, there has been trouble. We must adhere to the basic political and moral priorities of socialist, we must also realize that confused thinking has its own dangers. A good example of the ideological confusion is the opinion, according to which the opportunity to win 3 million forints "without work" in the national lottery would poison socialism! If somebody wins only one and a half million forints, is that moral then?

[Question] How do sociologists view the creation of great wealth?

[Answer] First of all, let us clarify the concept: wealth is usually the accumulation of material goods that are not used as capital. The question is:

What are we to consider great wealth? After all, if someone has an apartment and a car, he is already a millionaire.... What should be the demarcation line--10, 20 or 40 million forints? The wage policies in the state sector obviously make it impossible for anyone to accumulate such wealth. However, there are perfectly legal methods of obtaining such income, for example, by cultivating the small household plots: a net income of 2-300,000 forints can be realized by a family who works on one hectare of land. Incomes from inventions are also sizeable: Rubik's Cube was not the only idea that brought tens of millions of forints to its inventor. In Hungary there is also a widespread "cult" for illegal moneymaking and tax evasion; the present system of taxation and the personnel entrusted with collecting taxes are incapable of collecting taxes on really high incomes. The "second" and especially the "third" economies--exemplified by the illegal production of brandy, the use of state equipment to perform private work, the fixing of prices through illegal marketing arrangements--can provide huge profits. Health care is part of this picture, because medical practitioners who in fact "lease" state facilities for their own use can at times earn staggering untaxable incomes. As far as I am concerned, there is no difference between the tips given to the waiter and those given to the physician....

[Question] It is a saddening list....

[Answer] Evidently, some of the great wealth is derived from work, while others are not. It is my opinion, that if someone performs work that is useful and profitable for the national economy, let him become rich. Tensions are not caused by differences in wealth alone--who would be jealous of the millions earned by the talented investors?--but rather it is the wealth accumulated through shifty greed or by taking advantage of society's problems that is the reason behind popular anger.

[Question] According to your account, nearly all of the resented wealth is derived from the second economy. Janos Kornai's book, as well as several other excellent studies, showed that socialism always had shortages, and they will continue to exist for a long time. An economy based on shortages, on the other hand, promotes a second economy.... Is the circle closed then?

[Answer] Not quite. There are well-observable, conscious measures taken in our economic policy (contractual operations and enterprises, the nurturing of private small crafts, etc.) that are designed to draw the phenomena of the second economy into the first economy. With these, several formerly hidden incomes have become taxable. It would help matters greatly if the taxation system would be altered so as to make it possible to levy taxes in a societally just form, not only on the smaller, easily documentable incomes, but also on those larger ones which presently escape the attention of tax authorities.

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HUNGARY

MORE REGULATIONS MAKE HIGH INCOME SIMPLE TO HIDE

Budapest OTLET in Hungarian 27 Jun 85 p 13

[Interview by E. Sz. with Dr Miklos Karolyi, independent section chief of the main department dealing with residential taxes and excises at the Ministry of Finances: "Both Sides of the Regulations: Our Work Would Be Much Simpler If We Introduced the Banking System That Has Been Proven In Many Countries"]

[Question] Paradoxically, it appears that the more people participate in supervising the irreproachability of various incomes, the more it becomes obvious that, for a long time to come, there will be individuals who will be able to maneuver between the paragraphs without paying any taxes. Will the state ever be able to exercise control over the usually large incomes, or does the closing of some "loopholes" simply mean opening new ones?

[Answer] In order to see the situation clearly, it may be helpful to define which are the sources of income that "automatically," almost at the moment of making the payment, become subject to taxation. In addition to the private sector, this includes all secondary employment within the state sector, in agriculture--"made more attractive" with incentive rules--every income derived from the household plots, every bit of organized performance (in economic work associations, civil legal associations, trade associations, etc.), as well as earnings derived from individually undertaken assignments, such as "outside work," consultation, lecturing, or the renting of property. The listing could be continued indefinitely, but it is obvious that, with the exception of tips and payoffs, practically every forint comes to the attention of tax authorities.

[Question] In that case, why does it appear to those who earn their living based on wages and salaries, that is, taxed incomes, that the number of horribly large incomes derived from undocumentable sources is constantly growing? There are more millionaires in other countries, but there is less talk about the problems of taxation....

[Answer] Do not forget: From 1950 until a few years ago, the state apparatus of Hungary was being prepared for the time when the activity of the private sector, and with that the processes of taxation and control, will wither away. At the same time, the opportunities for earning extra income both inside and outside the socialist sector have multiplied greatly. In itself, this is not a problem, and it does not, "as a matter of course," lead to tax evasion. The trouble is that neither the tax investigators, the courts, the police, nor the prosecutors were prepared for this. The present staff--and this does not

include the police--is only able to investigate about 6 percent of the private craftsmen and merchants each year.

Of course, it is also part of the truth that they are not the ones causing most of the problems, since they are not the ones in whose hands the largest amount of illegal income accumulates. The private craftsman who has been working for decades in his trade and makes a good living at it is not about to ruin his reputation by participating in some tax scheme. Of course, I am not claiming that there are no "adventurers" among them. In that sector the yearly turnover is between 20 and 40 percent, which is quite high, considering that the total number of craftsmen is 140,000. Obviously there are those who do not make a good living, just as there are those who, having entered private business in the hope of getting rich quickly, do not hesitate to commit illegal acts.

[Question] In what areas can they succeed best?

[Answer] It is commonly known that, due to the various tax benefits that are politically justified, agriculture is a profitable area. Even there, however, the only possibility for getting rich quickly is to do business as a middleman. This does not mean that the tax regulations are faulty, only that commercial distribution is poorly organized in that it provides room for the growth of "vegetable mafias." For similar reasons, the construction industry is also a good "hunting ground," where in reality the problem again is not with the taxation of private craftsmen. Many people use the "bee system" when building their houses. In these cases, there is often no money changing hands, as labor and material are provided "free of charge." The proliferation of private construction creates good opportunities for tens of thousands of amateurs, and this again is not an indicator of the tax regulation weakness. But I can give you another example: Someone wrecks his car, the State Insurance Company estimates damages to amount to 20,000 forints, and a mechanic undertakes to fix the vehicle, quickly--making a few additional minor repairs as well--for 30,000, but makes out the bill for only 20,000.... The rates of subletting and apartment rentals are also regulated by law, but if one wants to acquire housing, one may pay twice or three times the legal amount....

[Question] From what you tell me, it appears that as long as there are shortages, the third economy will remain profitable and the tax authorities will be unable to do anything.... Can the "invisible" but still real incomes be documented?

[Answer] Look, there have always and everywhere been people who try to bypass regulations. In Hungary the situation is perhaps somewhat worse, because most people are naturally prejudiced against taxes. After all, the mere possibility of confiscation has often been used for purposes that have nothing to do with taxation. Just think back to the 1950's, when tax collectors used to sweep up and take away every grain, or when "tax delinquents" were prosecuted, to mention only two distant examples.

Nowadays the situation is much better, but prejudices take a long time to disappear. People should be given incentives for reporting their incomes, although it is a fact that tax exempt status is very desirable. Should I give



you examples? Years ago the "pirate taxis" used to give us many problems, nowadays tens of thousands of private taxis run all over the country. Their drivers pay their taxes, the legal status of their income makes them eligible for the benefits of social insurance and they have less difficulty purchasing vehicles. In the olden days we criticized people who used the factory equipment to produce items for private profit, nowadays we see more and more economic work associations being established at the enterprises. Their members pay taxes on their extra incomes, yet they still profit from their activities; and they receive material, energy sources and equipment from their employers.

[Question] If everyone ends up better by reporting their income, why should the staff of tax authorities be increased? Could the number of loopholes be reduced by increasing the number of people checking on incomes?

[Answer] The present existing aberrations could not be eliminated simply by raising or lowering tax rates. As for the size of staff, it must be increased, because the present apparatus neither quantitatively nor qualitatively suffices for the recently increased tasks. As for the possibilities offered by the "loopholes," my opinion is that our work would be much simpler if we introduced the banking system that has been proven in many countries. In Western crime films, we often see that even the least significant blackmailer is caught within hours, because his bank account gives him away. The large amounts of money and the high incomes are required to be documented by bank accounts, thus they are traceable. In Hungary private individuals cannot open a bank account, the remittance accounts with the National Savings Bank (OTP) are not required, plus they are secret. In Europe, aside from Hungary, only Denmark follows this practice. This is in spite of the fact that--aside from taxation reasons--the planners of every country need to have a more or less accurate picture of the fluctuations in personal incomes, in order to know the size and distribution of purchasing power.

[Question] Does this mean that if someone "locks up" his wealth in a savings account, he can escape being called to account?

[Answer] A tax investigator working for the local council, for example, cannot find out how much money someone has in his bank account. This can be investigated only by police authorities. In certain justified cases, such as if someone spends money ostentatiously, "examinations of wealth accumulation" can be ordered. Such investigations, of course, usually fail before the court, because the individual can furnish two witnesses who testify that they loaned him the money. The two can bring in additional witnesses for themselves, and in the end everyone is liable for only 10-20,000 forints, which anyone can loan to anyone.... In the past, a well-known--and undocumentable--trick was the purchasing of winning lottery or Toto [state-operated betting on sporting events] tickets. During the early years of those gambling operations, it seemed that every winner was a wealthy private craftsman....

[Question] Will the introduction of a unified individual income tax system alter the present situation?

[Answer] Absolutely! After all, the system will aim not only at the establishing of an equitable tax burden, but also at protecting the real value of earnings from the ravages of taxation. Taxes should be "neutral": the decision whether to undertake an otherwise unprofitable enterprise or not should not be determined by the amount of deductions.

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HUNGARY

PROBLEMS, ACHIEVEMENTS OF FIRST INDUSTRIAL PRIVATE UNDERTAKING

Budapest HETI VILAGGAZDASAG in Hungarian 13 Jul 85 pp 46, 47

[Interview with Laszlo Rozsahegyi, president, Rolitron Small Cooperative by Julia Gati. "I'm not Afraid of Mushrooming"--date and place not specified.]

[Text] Four years ago, Rolitron, the country's first private industrial enterprise--a civilian legal company--was still viewed as a source of scandal. Many disapproved of a small business that grew out of the association of 2 small tradesmen, initially employing only 10 persons. The civilian legal company that produced medical instruments, small computers and word processing programs was reorganized into a small cooperative last year. We asked Laszlo Rozsahegyi (age 38), the president of the cooperative and one of the founders of the former private enterprise among other things, how a booming private enterprise becomes a small cooperative.

[Question] Most of us achieve leadership positions by rising through the ranks. It would appear that you chose a different route. How did you become president of the small cooperative?

[Answer] After having graduated as an electrical engineer I was hired by one of the research institutes. Since my salary from there alone was insufficient to support my family, I also got electrician's trade license as a second job. When I left the institute in 1978, my work book designated me as "independent, intellectually occupied." In those days, officialdom viewed this kind of notation as the description of a person of some suspect, transitory status, somewhere between indulging in the pleasures of business on the one hand, and being a person of independent means, on the other. It is for this reason that a year later I returned to small trades: with only one employee I began developing medical instruments on top of a stool. However, I also sold a licence for the manufacture of fluorescent light armatures to a cooperative. One year before the decree concerning small enterprises was passed, small tradesman Ferenc Wahl and I created the country's first private enterprise in the form of a civilian legal company. The enterprise that originally employed 10 persons had 50 employees last year. That's when we reorganized ourselves into a small cooperative. My presidency is based on the members' vote of confidence.

[Question] Why did you have to become a small cooperative? Was it perhaps that you were not socially acceptable enough as a private company to do work for the state?

[Answer] Part of our problem was the lack of financial liquidity--our inability to arrange for the flow of capital. And besides, we have outgrown the authorized framework applicable to civilian legal companies.

[Question] Should I understand by financial problems that you were operating at a loss which you wanted to eliminate by changing the ownership form.

[Answer] No, that wasn't an issue at all. Our 1981 volume was 3 million forints mostly from medical instruments. In 1984 it was 55 million forints, this year we will reach the 170 million--and today, medical instruments constitute only one of our product lines. Our financial concern stemmed from the fact that our customers were unable to pay on time--a practice considered as "normal" by state-owned firms--but they do not tolerate such delays by private firms. From last year's gross production of 55 million forints we had 8-9 million forints worth of accounts receivable--amounts that were unbearably high.

[Question] State-owned firms usually request working asset credits to remedy such transitional problems.

[Answer] That's precisely the point. Only the National Savings and Loan Association [OTP] can lend money to private entrepreneurs, but only 100-200,000 forints at most. This would have satisfied our needs for only one day. As a matter of extraordinary exception, the Central Exchange and Credit Bank loaned us 4 million forints of circulating capital for half a year at a 16 percent annual interest rate, a rate that was 3 percent higher than what state-owned corporations of cooperatives can get. And even at that, the bank has demonstrated an extraordinary concern about repayment of this loan. They called me before the due date to inquire about my health.

[Question] Were there other disadvantages that accompanied the status of a civilian legal company? How did state-owned firms react to competition created by your firm, for example?

[Answer] It has happened more than once that we won over large state-owned firms in competitive bidding. Characteristically, in such instances, their tempers rose and many grabbed the phones seeking "protection" from us. But by far, this was not our greatest concern. The largest obstacle to the development of private enterprise is the unlimited liability flowing out of the activities of private work teams [gnk] and of civilian legal companies. If, for example, a house built by a bricklayers' gnk collapses, each member of the team is financially liable up to the full value of his personal and real property. The government can expropriate his home and his car, while from a less affluent member they could take only his night stand--well, they really couldn't do that. But this distinction in itself is unfair. The same situation at a state-owned firm results only in the denial of bonus payments or perhaps in disciplinary action; the liability of cooperatives



is limited to the value of each member's share, to the extent of their capital investment. During our civilian legal company days I was responsible for the financial security of 37 men--37 families that is--a responsibility I felt as unbearable. In our present form of operation everyone entered with a 30,000 forint share--and now I can sleep in peace. It's a clear-cut situation, everyone knows how much risk he assumed, nobody will take their property to the market.

[Question] It appears that like other organizations, Rolitron too is unable to resist the forces of growth. You started out with 10 people, this year you'll have 70, your volume has increased fifty-fold, and, in addition to manufacturing medical instruments, you have also entered the office equipment market. You not only manufacture your products, you also sell and repair them, and, as of recently, you also provide user training. Don't you think that sooner or later not only your hands and feet will grow, but that in fact the organization will grow out of proportion.

[Answer] I'm not afraid of bloating as long as the real, productive tasks, rather than the imaginary tasks increase. That's why we need new people, rather than new titles and new ranks. It is just natural for our new people that we also had to expand our service brands. At the same time, however, we are working on displacing large volume production by state-owned enterprises and cooperatives, while we concentrate only on intellectual products. From among the 50 members of our cooperative 30 are developmental engineers, while 12 to 14 are engaged in small scale production and only 5 provide administrative support. With us a sharp functional delineation is difficult, of course. We have one worker who loads the word processing equipment into our training bus, drives the bus and when he gets to the countryside he trains future users of the equipment, and in the evening turns into a salesman, and so on and so forth.

[Question] I trust that he doesn't do all this for one man's salary. How can you compensate for this type of extra work?

[Answer] The average age in our cooperative is under 30 and the per capita monthly income ranges from 12,000 to 30,000 forints. I'm not supposed to say more on this subject, however, because our general meeting has voted to treat salary levels as confidential. This way no one knows how much the other person earns. And I agree with this policy, because we've eliminated that unnecessary disturbing moment when individuals compare salaries and are envious of each other.

[Question] Considering what you've said, it would appear that Rolitron's internal organizational and management principles differ to a certain extent from those we are accustomed to in the economy. Does this create any problems in your economic relationships?

[Answer] I don't believe that our problems differ greatly from those experienced in other organizations of a similar size. Shortages of the background industries provide a constant concern. However, we now have four or five subcontractors who became viable because of Rolitron's needs and orders.

Obviously, it will come as no surprise if I tell you that we are struggling with a chronic parts shortages. Export sales of our own artificial kidney equipment to a West German firm amount annually to 3 million forints. This amount may not seem much, nevertheless you should consider that to achieve this volume, we did not receive a single penny in state support, nor did anyone pay for our travels, and so forth. But, in order to solve the commonly known Hungarian health problem of artificial kidneys, we would need substantially more spare parts and disposable products that can only be acquired in the West.

[Question] Exporting is nice--but how many artificial kidney installations have you sold to Hungarian health care?

[Answer] As many as they wanted. In other words: none thus far. Testing is being done at one domestic clinic.

[Question] Every sector of the economy claims that the reason they lack modern products is because they can't get their hands on parts--and thus the circle is closed.

[Answer] But not at our place. We are thinking of seeking authority to deal in foreign markets, and to open a certain type of "general store." We would like to trade Hungarian products, heretofore not exported at all, for parts, and to thus permanently solve the artificial kidney supply problem of the domestic health care interests.

[Question] Isn't this too large an undertaking for a small cooperative?

[Answer] To replace and expand the entire domestic artificial kidney installation supply would require only about a hundred units which we could deliver within 2 years. Acquisition of the necessary accessories presents a much more difficult problem: it would require the equivalent of about 150 million forints in hard currency. We could undertake the manufacture of these accessories provided that we establish a mixed venture with our West German partners.

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POLAND

## POLL INDICATES OBSTACLES TO DIRECT FOREIGN TRADE

Warsaw ZYCIE GOSPODARCZE in Polish No 30, 28 Jul 85 p 9

[Article by Jozef Sobota, "Reform 1984: Fourth Poll by the National Economy Institute: Foreign Trade"]

[Text] Poll results have confirmed previously expressed opinions that enterprises are minimally interested in direct participation in international economic cooperation. Among enterprises polled, just one (mineral fertilizers industry) has had the entitlement for direct foreign trading as far as scientific and technological know-how was concerned. Dislike of licenses, observed at all stages of the enquiry, has led us to assume that such a solution has no significant chances for acceptance under the existing circumstances (profitable contract prices, paid to the producers by specialized foreign trade agencies; setting up partnership companies under trade law).

### Monopoly Prevails

In this situation, the enterprises polled exported their products through such specialized agencies, while at the same time they joined trade companies, set up by the existing foreign trade enterprises. 27 out of 41 exporting enterprises (among those polled) were partners in trade companies; all of them, totally or in part, managed their exports through them.

Unlike the 1983 poll, last year's enquiries revealed among the enterprises many views concerning their previous cooperation and advantages derived from their membership in trade companies. The advantages most frequently mentioned included more partner-like treatment of enterprises, and greater than before involvement of trade companies in promotion and export sales. Such claims lead to believe that enterprises attach more weight to prospects of a more partner-like relationship with the exporting intermediary and of affecting his activities, than to financial gains available in form of dividends.

Alongside with positive evaluation of trade companies' activity, critical opinions were also vented, claiming that they operate in no different way than at the time prior to establishment of companies. Enterprises attribute

such a state of affairs to the ongoing industrial monopolies. A year and a half after the companies were set up, it seems certain that they have prevailed over all other organizational forms in foreign trade, but at the same time they have allowed the specialized foreign trade enterprises to maintain their monopolistic position.

Since the reform's solutions essentially assume autonomy of enterprises, the choice of legal forms of cooperation between foreign trade agencies and domestic suppliers of exported goods is consequently regulated through contracts between the parties involved. Among enterprises polled, the formula of selling through specialized foreign trade agencies and on their account, definitely prevails.

Only 25 percent of enterprises polled use the commission sale formula, half of them in its mixed form; it means that part of the goods are sold by the intermediary on his own account, while another part is put at his disposal on commission. Such a solution, together with the accountability principle in contract prices, effectively insulates the producer-exporter from real sale conditions on foreign markets, and releases him from any responsibility for export profits.

#### Accountability

Compared to 1982 and 1983, no significant corrections have been introduced in 1984 in the manner of accounts clearing. In exports, the guiding principle still remains: to safeguard the enterprise profit on a level not lower than the one reached in domestic sales. In import, producers-buyers pay for imported goods prices similar to those in domestic trade.

In the settling of accounts for exports between producers and foreign trade enterprises, three variants have emerged, similar to those observed in previous enquiries, but the extent of their appearance has changed.

The first variant concerns exports of goods which have official domestic prices (metallurgical products, meat products, mineral fertilizers). Exporting enterprises were paid the official price, supplemented by a fixed percentage linked to the increased labor-intensivity involved in preparing those goods for export. The prices paid to producers-exporters thus guaranteed their profit.

The second variant concerns a situation when exporting enterprises market their goods through foreign trade enterprises according to commission-sale contracts, and are paid market prices. Among those polled, only four enterprises--less than in 1983--settled their accounts with foreign trade enterprises along those lines. It has been noted that this variant favored abandonment of market prices and their replacement by contract prices based on costs.

The gradual abandonment of such a modified form of commission sales means that enterprises tend to avoid verification of their products on foreign markets. This attitude is anchored in their awareness that export is



needed even at the cost of making concessions to producers and shifting all the responsibility for its effectiveness to the budgetary level.

Thus it is the third variant which overwhelmingly prevails in the settling of accounts; 75 percent of enterprises polled cleared their accounts accordingly. This variant is based on the principle of selling for contract prices to the specialized foreign trade enterprises and at their account.

In the enterprises polled one could find two methods of fixing contract prices: costs, supplemented by a fixed profit rate; or market prices. Out of 32 enterprises which sold export goods through foreign trade enterprises and at their account, not less than 25 fixed their prices on the basis of costs.

In the consecutive stages of the enquiries into the reform, the tendency to expand the area of settlements based on contract prices, negotiated according to the producers-exporters' costs, can clearly be discerned; it indicates that the machinery of foreign-exchange rates is ineffective, and that production costs go up. Producers-exporters aim therefore at making profits through revision of the terms of their contracts with foreign trade enterprises.

Such behavior, rational from the enterprises' point of view and accepted by foreign trade enterprises, has caused, and will continue to cause--given additional expansion of such practices--total negation of the parametric role of exchange rates and contract prices in export decision making.

This claim has been confirmed by enterprises' replies to questions posed to them about the role of exchange rates and of the trends to correct exchange-rate policies. Almost all of those who answered the question claimed, that it does not affect at all the profitability of their exports; at best, the exchange rate determines the scale of corrections achieved at the foreign trade enterprises' level. The most disturbing aspect of this response is the obvious lack of understanding for the linkage between exchange rate modifications and growing production costs due to changed supply prices.

Thus, the two 1984 corrections of the foreign-exchange rate (in March and in September) just barely affected decisions made by the enterprises polled. Estimates made for the economy as a whole indicate that there was no improvement in export profitability: both in April and in October the share of profitable exports oscillated around 60 percent. One can therefore claim with a high degree of profitability that as long as the exchange rate has no active impact on decision making in the enterprises, and the accounts settlement system effectively continues to absorb export inefficiency, no enterprises would be pushed to any action aimed at improved effectiveness of their export production.

#### Foreign Currency Feed

The enterprises polled listed five sources of their foreign-exchange feed: hard currency sales' deduction [ROD]; funds received from their

establishing organs; central funding; association's funds; and funds received from their domestic customers.

Among exporters, almost all the enterprises which used to sell in hard-currency markets (38 enterprises) had a foreign-currency deduction account. The only exception was a meat processing plant, which had no deduction because of the export accountability system introduced in this branch (foreign-currency funds accumulate on the association's account).

Among those who enjoy foreign-currency deduction accounts, the majority consisted of 23 enterprises which used a joint foreign-currency deduction account, owned either by an association or by a trade company. Among owners of foreign-currency deduction accounts, not a single one failed to spend funds accumulated on this account. For six enterprises that was the only source for financing their import purchases. The funds spent were used above all (in 70 percent) on financing imports of raw materials and spare parts. The remaining 30 percent was spent on investment purchases and used to cover their [domestic] suppliers' needs. Both in 1983 and in 1984, transfer of funds to suppliers had been preceded by an analysis of their needs and of the justification for the amount required.

1984 was another year for growing involvement of the ROD funds in payment for import purchases; compared to 1983, 60 percent of such accounts' owners increased their ROD spending. The number of enterprises whose spending of foreign-currency accounts exceeded their income level, also went up. In 1983 it happened in six enterprises, but in 1984 there were 15 similar cases.

In 1984 the increasingly limited freedom to dispose of funds accumulated thanks to ROD, was highly disturbing. Forty-one percent of respondents mentioned various limitations; those most frequently listed included delays in issuing letters of credit by the Trade Bank [Bank Handlowy], and attempts by ministries and foreign-trade headoffices to interfere in the ways they spend such funds.

Ministry of Mining and Energy was the most drastic example: through its associations and supply agency it evaluated and endorsed the spending of ROD funds. The enterprises polled were also upset by cases of cutting down their foreign-currency deduction rates, possible because of the rather murky criteria system.

The assumption that rate reduction might be the best way to stimulate exports seems rather dubious; more probably, it would step up pressure to obtain foreign currency from other sources. Hence an urgent call to establish clear criteria for setting up foreign-currency deduction rates, to eliminate arbitrariness and haggling, and to create simultaneous linkage between the deduction rates and the exports effectiveness and growth.

ROD should gradually evolve from being purely an account of record, and become an account of assets, thus paving the way for possible transfers of

foreign-currency funds between enterprises (resale of foreign-currency funds through currency auctions). One has to admit however, that some enterprises consider their account of record as a quite satisfying solution, since it does not force them to freeze their financial funds (as might have happened had they owned accounts of assets). The problems here raised do not in any way detract from our opinion that foreign-currency deductions are among the soundest solutions of the reform.

Alongside with more widespread occurrence of foreign-currency self-feed, centralized allocation of foreign currency continues to play a major role. Forty-one enterprises (60 percent of those polled, 70 percent of importers) had recourse to funds allocated from Ministry and central funds. Most enterprises received funds for their fulfillment of governmental orders or, to a lesser extent, for fulfillment of operational programs and export activation. The higher number of enterprises which were granted funds to cover their fulfillment of governmental orders is due to the growing number of governmental orders in 1984.

Listing their 1984 sources of foreign-currency feed, enterprises mentioned the growing role of association's funds. This would confirm the growing significance of associations in supplying their associated enterprises and in coordinating their foreign-currency spending. Their increased role was made possible only thanks to voluntary transfer by exporting enterprises of part of their foreign-currency funds to the association, and thus establishing a foreign-currency fund able to cover foreign-currency expenses of the non-exporting producers. Such a course of action was fully justified, especially since some producers might be able to export only if other members of the association would renounce exports. A case in point is the Association of Meat Processors, or the Association of Furniture Makers.

The use of funds received from domestic customers as a recompense for broadly conceived foreign-currency input (including that, necessary for initiating turnout of new products) also has continued. Fourteen enterprises have profited from this form of feed, and in future its further expansion can be expected, especially if the notion of "direct supplier", entitled to receive remittance from foreign-currency deduction accounts, would be broadened.

Unfortunately, foreign-currency credits and auctions still play no role in foreign-currency feed; both forms of feed are quite marginal on the national-economy level, and did not appear in the poll.

#### Obstacles and Stimuli

Eighty percent of exporters among the enterprises polled indicated occurrence of various forms of export constraints. Answering the question, What is the main obstacle to exports?, all the enterprises, regardless of branch, pointed out low quality accompanied by high prices. One might therefore dare formulate a rather prefidious thesis, that world prices did not keep pace with the growing production costs of our exporters. Such lack of competitiveness derives from many partial elements, including the technological state of machines and equipment, low quality of raw materials

and containers, shortage of highly qualified labor force, and--above all--unsatisfactory technical and technological development.

However, the above mentioned structural and systemic obstacles are frequently intensified by the administrative kind of obstacles. Among those, the enterprises include the central distribution, which most frequently changes the size of export quotas. Consequently, those enterprises are unable to provide their customers with stable conditions of supply. This happens most often in metallurgy and in the mineral fertilizers industry.

Hence our query: do those enterprises ignore such constraints in their activity? To the question, "Are any initiatives aimed at export growth being undertaken?", Thirty enterprises replied affirmatively, pointing to their various actions. Twenty enterprises initiated modernization of their products, and of production methods calculated to improve the quality of their products. Fifteen enterprises were supposed to turn out new, high-quality, state-of-the-art products. In addition to the urge to step up their own actions, enterprises appreciate the need for more active approach on the part of the foreign-trade apparatus, which should join forces with them in looking for new markets.

The attempts to undertake actions aimed at export intensification, indicated by the respondents, might confirm that enterprises do regard export growth as their chance to improve financial effects, in particular in the face of the 1984 revision of numerical values of reduction in income tax and in the State Fund for Vocational Promotion [PFAZ]. The significance of such reductions is underlined by their very high share in the sum total of income-tax reductions.

Among those polled, 90 percent of exporters enjoyed reductions amounting in the average to some 75 percent of their total income-tax reductions. Alongside with the possibility to obtain foreign-currency deduction, these were listed as the most important stimuli to an enterprise to undertake export production. Such order of stimuli indicates that the existing system of pro-export stimulation has been addressed mainly to enterprises; this was mentioned by many respondents. 1984 has brought further intensification of this kind of stimulation through priorities in material supply due to fulfillment of governmental orders for export production.

In this context, the need for more active stimulation of workforces acquires particular significance. In 1984 there was no operative system for remunerating workers who fulfilled export targets, except for a bonus for plan fulfillment, paid from funds made available by the Ministry of Foreign Trade. It might be worthwhile, therefore, to consider the possibility of designing a system of stimulation able to produce real and effective pressure by workforces on enterprise management to step up exports.

To sum up: In 1984 no essential systemic changes took place in the foreign trade area. The corrections introduced concerned just the numerical values of the previously operating instruments.



POLAND

## RESULTS, FUTURE OF GOVERNMENT ORDERS, OPERATIONAL PROGRAMS

Warsaw: PZECZPOSPOLITA in Polish 31 Jul 85 pp 1, 5

[Text] How is the efficiency of activity of government orders and operational programs which under conditions of a materials deficit have become the instrument to implement necessary economic tasks and to protect measures of essential social needs? Which changes in these issues and also in the entire sphere of subsistence means will exist next year and later? These issues were discussed at a Planning Commission press conference on 30 July by Franciszek Kubiczek, first deputy of the Planning Commission, and Jerzy Wozniak, minister of the Department of Materials Economy.

At present, the system of government orders includes 115 materials and goods and 95 investment tasks, among them many health institutions, schools and food processing manufacturers. Sixty percent of the value of all orders for materials and goods are assigned directly to the market to influence market production. Among four currently active programs, the implementation of three (they concern the food economy, health protection and clothing for children and youth) prevails to improve the supply of much needed and demanded goods. The government has ordered the increased supply of the following: enamel, buckets, shampoo, notebooks, hosiery and sewing machines. Thanks to this program, there has been an increase in delivered textiles, leather shoes, electric light bulbs, sewing machines, washers and dryers. In the sphere of activity of government orders and operational programs, the tasks planned for the last year and the first half of this year have been implemented for the most part, although there have been delays because of the shortage of imported raw materials. Encouraging news is that over half of the orders made by institutions have been implemented. Generally speaking, the operational programs and government orders were not sufficient to achieve all the market's needs, but if not for them in reality, the level of efficiency and investment would have been much lower.

These profitable experiences in operational programs have shown them to be permanent, not temporary, solutions to the implementation of economic plans in 1986-1990. The range of use of these instruments will not increase because excessive reuse of supply priorities could bring devaluation and disorganize the entire supply market.

In 1986, only three of the four operational programs will be functioning, and the fourth (clothing for children and youth) will be replaced by a

system of government orders. The actual tendency for the future will depend on extending the period of order activity, which will have a stabilizing effect on production and the market. The intention is to bind for a period of three years the orders for 62 of 110 goods and products. In the sphere of investment, full implementation of tasks is intended. Special attention will be made so as not to lower priorities for investment in bakeries, dairies and schools.

Stating that the current system of material-technical supply has been successful, but radical changes are not anticipated, Minister Wozniak cited, among other problems, too little proficiency and operating capacity for units of material turnover and avoidance of long-term agreements between suppliers and customers. For the goal of eliminating inefficiencies in the period of the next 5-year plan (the system will stabilize in this period), some novel approaches will be adopted: introduction of the possibility of price negotiation; long-term agreements between suppliers and customers; and introduction of a special fund for development of wholesale trade to support the system.

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POLAND

## CUSTOMS DUTIES AID 'PENTX' SALES RAISED

Warsaw RZECZPOSPOLITA in Polish 31 Jul 85 pp 1, 5

[Text] The issue is whether to spend convertible currency in the country. As discussed by Antoni Karas, deputy minister for foreign trade, there is an idea to change customs regulations. This is the main goal of the amendments. No less important will be a crack down on speculation, which has become an avocation of many "tourists":

[Question] How do the new changes look?

[Answer] No customs duties will be levied on food (excluding condiments), medicine, automated housekeeping equipment, furniture, sports and tourist articles, plant preservation measures, and agricultural equipment. The customs duty will be eliminated on microcomputers. Also the customs duty will be eliminated on goods brought in for personal use. These are as follows: clothing up to 20 kg; 10 kg of personal underwear; 5 kg of chocolates; 3 kg of coffee; 3 kg of cocoa; 2 kg of tea; 10kg of citrus fruits or other preserves. We have increased from 1 kg to 3 kg customs elimination on hygienic products.

[Question] The duty will have to be paid on goods exceeding these specified limits. The main increases took place in three groups: cars/trucks and spare parts; electronic goods; and furs and leathers.

[Answer] As regards cars, the criteria for customs duty are changing. There will now be a charge not only for the weight but also the size of the engine. And for diesel engines, the charges will be as follows: 1300 cm<sup>3</sup>, for every 1 cm<sup>3</sup> the customs duty will be 600 zlotys; from 1300-1800 cm<sup>3</sup>, it will be 700 zlotys and over 1800 cm<sup>3</sup>, 900 zlotys. Gasoline engines will be 700, 800 and 1000 zlotys.

Cars and trucks over 5 years old will have a customs duty of 20 percent. We have rejected, however, the principle of increasing the duty by 50 percent if the car has not been driven for 3 years.

[Question] As stated by Minister Karas, an increase in the duty is necessary to reduce the difference between imported cars and those sold in internal export.

[Answer] "Pewex" also has introduced customs duty for electronic equipment. For this, some in the higher-priced areas will pay considerably more than up to now: for a color TV, 10,000 zlotys (up from 4000 zlotys) and videotape, 20,000 zlotys (up from 10,000 zlotys). This should increase internal export, improve real prices and enrich the market. We shall introduce "Baltona" as a competitor to "Pewex" for the domestic market.

This restrictive character also should increase customs duties for leather goods and sheepskin coats. For a sheepskin coat, one will pay 5000 zlotys for 1 kg (up from 1000 zlotys) and for every kilogram over the norm, 15,000 zlotys (up from 5000 zlotys). This is designed to prevent so-called "private import" and generally disapproved speculation.

A detailed description of the new duties can be found in the latest DZIENNIK USTAW No. 33.

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POLAND

## PLANNERS DISCUSS REFORM MODIFICATIONS

Warsaw RZECZPOSPOLITA in Polish 12 Jul 85 p 2

[Article by: CH]

[Text] (Own Information) In accordance with the principle of Sejm supervision of the implementation of the reform, for the third time, the deputies serving on the Commission for the Economic Plan, the Budget and Finances, the Commission for Legislative Work and the Commission for Enterprise Employee Self-government Affairs examined the report of its implementation on 11 July--this time for 1984. The evaluations of the combined commissions and that of Minister Wladyslaw Baka, who reported on the basic ideas of this document, were in agreement: the reform has begun to impact the course of economic processes to a greater extent than in previous years, although it has not resolved many issues of importance for the future, such as the link between the increase in emoluments and the production increase.

The directives stated in the final section of the report that define the spheres on which the activities of the reform "architects" are to focus were reflected practically in the draft law modifying the reform mechanisms for 1986 through 1990, with whose first draft the deputies familiarized themselves. The entire burden of the discussion shifted in this direction.

The draft law "On Adapting the Regulations of Certain Laws Defining the Operation of the Economy to the Conditions and Needs of Further Socioeconomic Development" contains proposals for changes in the following laws: the law on prices, the law on the State Professional Activation Fund, the law on the taxation of units of the socialized economy, the law on the financial management of a state enterprise and its bankruptcy and the law on socio-economic planning.

Many of the projected changes have the purpose of supplementing and defining precisely already binding legal regulations. There are also proposals for substantive modification. The 3-year binding period of the law on prices shows that the statement made in it regarding "shockingly high profit" has become a barrier to bringing in technical progress to enterprises that will reduce production costs. The mechanism was the following: a reduction in costs means higher profits, which means a high

level of taxation of profits, which leads to the weakening of other effectiveness-producing mechanisms. The draft proposes to replace this term with the concept of a "shockingly high price," one that is easier to define, whose upper limit will be determined by the minister for price affairs. Another change amounts to the assertion that the profit included in calculating a contractual price is a contractual sum. This means that the calculation of this price is only supposed to facilitate the process of concluding the contract and is not to designate the selling price.

In addressing the proposals that the system of PFAZ obligations be turned into a tax, the draft law recommends that in the PFAZ law the regulations concerning the principles of debiting emoluments be eliminated. The principles for creating emolument funds would be transferred to the law on the taxation of units of the socialized economy. The draft assumes that the previous tax on wages will be replaced by a dual tax. The old wage tax will constitute part "A" of this tax, while part "B" will be paid out of profits available for distribution, thus performing the function of regulator of emoluments payments.

The modifications of the law on the financial management of enterprises aim to create the most favorable conditions possible for implementing technical progress. They regulate the principles of the creation and utilization of the applications results fund in a new way. The changes also open new possibilities for transferring funds to finance joint developmental ventures. In order to counteract the signs of uneconomical management in enterprises, the draft proposes that the point at which an internal proceeding is initiated be stepped up. This is discussed in the regulations of the law on improving enterprise management and on enterprise bankruptcy.

The deputies appointed subcommissions to examine this document. Deputy Zenon Szulc (PZPR) was appointed chairman. During the deliberations, that were chaired by deputy Witold Zakrzewski (nonparty), the following deputies spoke: Zdzisław Czeszejko-Sochacki (PZPR), Kazimiera Plezia (PZPR), Zdzisława Sudyka (SD), Alojzy Melich (PZPR), Zenon Szulc (PZPR), Janina Legowska (PZPR), Franciszek Sadurski (ZSL), Tadeusz Haladaj (PZPR), Stanisław Rostworowski (nonparty, ChSS [Christian Social Association]) and Kazimierz Rokoszewski (PZPR).

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POLAND

NEW INDUSTRIAL PRODUCTS, EXPORT DEALS PROFILED

Warsaw POLISH TECHNICAL REVIEW in English No 1, 1985 pp 29-31

[Excerpts]

PRAWN CATCHING SHIPS FROM USTKA

The flag was hoisted in the Ustka Shipyard on a prawn catching trawler „Leda”, the first of a series of 26 cutters ordered by the Soviet shipowner. The prototype cutter, the largest ever built in this shipyard, has been equipped with modern radio-navigation installations and is a unit of a world standard.

120 SHIPS FROM THE SZCZECIN SHIPYARD

The Szczecin Shipyard is now fitting out a new big bulk cargo carrier named „Major Hubal” destined for the Polish Steamship Company. The vessel has a tonnage of 33 000 t.d.w. The Polish merchant navy has operational 120 vessels built in the Szczecin Shipyard (i.e. nearly one third of all ships built in that shipyard). Sixty five ships with a total tonnage of approx. 900 000 t.d.w. were sold to the Polish Steamship Co. and the „Polish Shipping” Company in Szczecin, and 55 ships (total tonnage 450 000 t.d.w.) to the Polish Ocean Lines, Gdynia and the Polish Baltic Shipping Co. Kolobrzeg.

100 MILLION TONS OF RELOADED CARGO IN THE NORTHERN HARBOUR

The 100 millionth ton of cargo (coal and liquid fuel) was loaded in the Gdańsk Northern Harbour on the „Maratha Shogun” ship flying the Indian flag and taking 77 000 tons of Polish coking coal to Belgium. The Northern Harbour whose construction was started in 1970 is the largest Polish maritime investment after the Second World War.

NEW LIGHTHOUSE AT THE POLISH SEA COAST

A new lighthouse named „Gdańsk” has been built on the tower of the harbour master's office in the Northern Harbour. In addition to the lighthouses in Rozewie, Swinoujście and Kołobrzeg, it ranks among the strongest in the Baltic. The lighthouse has a maximum lighting range of 26 nautical miles (18 miles when using stand-by lights). The lighting height is 56 metres above sea level. The lighthouse is provided with an automatic, remote control system. The source of light is constituted by three two-sided panels with reflector lamps of 150 W each. The light signal consists of 3 flashes of half a second each followed by half a second pauses in between and, after completion of the cycle, there is a 6 seconds pause.

A BUILDING MATERIAL NAMED „PYŁO-BETON”

The „Prefabet” Concrete Industry Enterprise at Kalisz Pomorski has started in its factory at the „Doła Odra” power station (Szczecin voivodship) the production of dust-concrete blocks, each of them equivalent to 6 traditional bricks. As shown by tests, they have better insulation and thermal properties, and exhibit a high mechanical strength in spite of their lower weight. Tests of fly-ash recovered from „Doła Odra” have been made and the dust-concrete mixture composition worked out in the „Cebel” R. D. Centre in Warsaw. It was found that there are no hazards connected with radiation emitted by the fly-ash, as these blocks have a radiation level corresponding to that of tra-

ditional ceramic bricks. This year, the plant will manufacture ca 10,000 m<sup>3</sup> such blocks i.e. ca 5 million dust-concrete elements.

#### UTILISATION OF FURNACE WASTES

The Institute of Hydro-engineering of the Polish Academy of Sciences in Gdańsk, which is conducting research on the utilisation of power furnace wastes (fly ash), has developed a technology of forming ash hydroinsulation linings. The latter have been used for sealing an underground water tank in the Hard Coal Mine „Manifest Lipcowy” at Jastrzębie. Work is now being continued on the application of the linings to other purposes.

#### SORBENTS FROM WORN OUT TYRES

Experts from the Gdańsk Technical University have used wastes from worn out tyres for the production of several types of sorbents destined for the liquidation of oil spilled on water or ground. This is of great importance e.g. for the protection of beaches against pollution with oil.

#### POLIMEX-CEKOP BUILDS INDUSTRIAL PLANTS IN HUNGARY

The Polimex-Cekop Foreign Trade Company specialized in the export of complete industrial plants has concluded two contracts with its Hungarian partners. The first of these worth over 7 million roubles, concerns an industrial hall with a 1 hectare surface area for the „Koebanya” brewery. The second contract involves an industrial hall and two buildings which will accommodate store-rooms and social premises for the „Hungarovin” enterprise. Both plants will be located in Budapest. It is planned that their construction will be completed by the end of 1985.

Polimex's annual turnover figure in Hungary amounts to approx. 10 million roubles. Polimex exports to Hungary various machines and equipment, including those for the food-processing and timber industries.

#### MACHINE PRODUCTION LINES FOR THE USSR

The „Metalexport” Foreign Trade Company has signed a contract with the Soviet „Stankoimport” company for the supply of 5 automatic machine production lines made by the Ponar-Wiepofama special-duty machine tools factory in Poznań for

a lornes manufacturer in the USSR. The lines comprise modern and highly-efficient machines of an original Polish design. Their delivery will be started as of the second quarter of 1986. The lines will be used for machining various elements e.g. for engine blocks of high payload lornes.

#### MODERN FACTORY OF BITUMINOUS MATERIALS

A modern process line type WMB-30 for making bituminous materials used in the building of roads and streets has been installed in the Factory of Bituminous Materials at Wilcza Góra, near Warsaw. The line has been manufactured by the „Maddro” Works, Cracow. This is a completely automated plant of concrete-asphalt materials, and has an output of 30 to 40 tons per hour. It is possible to produce up to 40,000 tons of pavement or base course material per year. The plant presents a relatively small danger to the environment, pollution of the area in its vicinity having been considerably reduced.

#### DISPATCH ROOM EQUIPMENT

The TELKOM-TELEFA Tele-electronic Works, Bydgoszcz, is the manufacturer of the TELDIS-E dispatching equipment. The latter makes it possible to create a system of telephone communication for operative management and information transfer. Additional installations allow an efficient organisation of the communication system at all levels of the organisational structure of the plant. TELDIS-E may be equipped with two, three or four dispatching stands, and may cooperate with direct subscribers or subscribers of the telephone and radio-telephone networks. It also enables the transmission of verbal information by means of a special loudspeaker network. Each stand has two connection systems: one for individual contacts and the second for teleconference connections with a group of a maximum of 20 persons. The installation makes it possible to join in a teleconference discussion as well as to transmit the teleconference to another dispatching stand. Each conversation may be simultaneously recorded on a built-in tape recorder. The main stand is provided with special attachments which considerably extends the range of possibilities offered by it.



#### NEW LORRIES FROM STARACHOWICE

The Lornes Factory at Starachowice is conducting intensive preparations to start the production of new „Star-1142” lorries which, compared to the „Star-200” model manufactured so far, feature a higher payload, reduced oil consumption and a 100,000 km longer mileage to the main overhaul. The „Star-1142” trucks have a tilted 3-person driver's cab, and an easier access to the engine which is provided with a reinforced connecting-rod and a more efficient cooling system. Most of other units and assemblies have been also improved. It is expected that lot production of the new „Stars” will be started towards the end of 1985. The „Star-1142” will serve as a basis for the assembly of other design versions in the next few years, namely „Star-1366” and „Star-1144”. The latter lorry will be earmarked for use on big farms.

#### POWER EQUIPMENT FOR NUCLEAR POWER STATION

Many power installations for the nuclear power station now being built in Żarnowiec will be of Polish make. One of the suppliers is the „Zamech” factory in Elbląg which is also the designer of equipment for the engine room, a large 600-ton capacitor, two and four-stage heaters, pumps and, above all, turbines. Nuclear power stations built so far on the basis of WWER-440 reactors relied on the coupling of one reactor with two turbine sets, each rated at approx. 230 MW. The Polish-made set envisages the use of one 465 MW turbine instead of two. This creates a number of technological problems but guarantees considerable savings of expensive, high quality mate-

nials. Four such power sets are to be installed in Żarnowiec.

#### START-UP OF A NEW TURBINE IN THE „WROCLAW” HEAT AND POWER GENERATING PLANT

The start-up of a new turbine and its synchronization with the national power network marks the conclusion of the investment cycle in the „Wrocław” heat and power generating plant. The new turbine, type UC-100, rated 100 MW has been made by the „Zamech” Engineering Works in Elbląg. It is the largest unit of its kind to be used in a heating plant. The turbine is part of a system having a thermal power of ca 627 GJ and electric power of 100 MW.

#### TELEPHONES FOR EXPORT

The Radom Telephones Factory (RWT) has been awarded an honorary mention of the Polish Chamber of Foreign Trade and the Soviet Chamber for Industry and Commerce for its exports to the USSR. The contract signed for this year envisages the sale to the Soviet Union of 950,000 telephone sets (60 per cent of the total production output). The Soviet partner has been supplied so far, i.e. since the first contract was signed, with 11 million telephone sets. For several years now, RWT has been cooperating with Middle Eastern countries. The value of a contract signed with Syria for the construction of a telephone sets assembly plant will amount to 2 million US dollars. A similar order has been placed by Jordan. RWT is also an exporter of telephone dials. An order for 2 million dials was placed this year by Czechoslovakia.

POLAND

## EXPORT SALES OF SMALL-SCALE MANUFACTURING PLANTS

Warsaw POLISH TECHNICAL REVIEW in English No 1, 1985 p 24

[Excerpts]

*An agreement signed between the Foreign Trade Office ZORPORT, Katowice, and the HUTMASZ-PROJEKT-HAPEKO Office for Designs and Completion of Deliveries of Metallurgical Machines and Equipment, Katowice, which acts also as a General Supplier, and also the good cooperation with the UNIDO Office, Warsaw, have resulted in a complex offer for the construction and fitting out of small industrial plants.*

*This new Polish offer covers several score small industrial plants manufacturing mainly articles for household use and for handicraftsmen's shops.*

*The small industrial works offered feature a number of advantages, the more important of these including: ready adaptability of their production programme to market requirements, low capital investment costs, high profitability, simplicity and operating reliability of machinery and equipment, small manpower requirements (from 15 to 60 persons), ease of training unqualified workers for the jobs, small floor space requirements.*

*The general supplier offers a full range of „turn-key” - type deliveries. Construction work may be done by the investor on the basis of his own technical documentation.*

*Most of the plants offered may be also utilized as training workshops attached to large industrial works and used for conducting vocational training courses for new workers. The offer covers, among other things, industrial works manufacturing handicraftsmen's tools, farming implements and general agricultural tools, fitter's tools, metal fancy goods, metal products, door locks, nails, pan scales, straight-rund and cut-off valves, candles, oil paints, emulsion paints, nitrocellulose lacquers, putty, household glass, copper-smith's products, crystals, bathroom fixtures, mechanical washers.*

*Our editorial board intends to publish a series of articles presenting some of the small industrial plants included in the currently available extensive offer. The present article is the first in this series.*

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POLAND

FIAT RENEWS CONTRACT, OFFERS CREDIT

Contract, Credit Line for Remodeling

Warsaw ZYCIE WARSZAWY in Polish 12 Jul 85 pp 1, 2

[Article by Dariusz Piatkowski]

[Text] (Own Information) Thursday, 11 July, was an important day for Polish motor transport. After years of stagnation, sluggishness and waiting, the implementation of Government Presidium decisions, based on its recognition of the advisability and necessity of developing the production and modernization of passenger cars manufactured in Poland, has begun.

On 11 July, a contract was signed between POL-MOT and the FSM [Small Passenger Car Factory] in Bieleko-Biala and the FIAT Plant in Turin.

The contract grants a line of credit for the modernization of the Small Passenger Car Factory and the complete renovation of the Polish Fiat 126p, whose new version will be known as the 126-Restyling. The contract was signed by the following:

For Poland, the director general of POL-MOT, Andrzej Wladyka, and the chief director of FSM, engineer Ryszard Welter; for Italy, the deputy director general of Fiat, Piero Fusaro, and the director of the international cooperation division FIAT-AUTO, Domenico Ferraris.

Also present were the chief director of the Fiat firm Cesare Romiti, the director general of FIAT-AUTO Vittorio Ghidella, the director responsible for international cooperation, Marco Pittaluga, and the representatives of the heads of the Ministry of Foreign Trade and the Ministry of Metallurgy and the Engineering Industry. Italian ambassador to Poland, Guglielmo Folchi, was also present.

The contract provides for FSM's cooperation with Fiat on the production of the "126" until 1991. Of course, this car will be changed completely. It will receive a new, 703 cc-capacity engine, with a horsepower of approximately 28 km, cooled by liquid. Since the placement of the motor will be different

and changes will be made in its design, while it will remain in the rear and use rear-wheel drive, it will be possible to place baggage behind the rear backrests. An additional, third rear door will facilitate the placement of baggage.

The new, more powerful and more economical motor, the changed elements of the body and the changes made inside the car will mean that the 126-Restyling will continue to be a good export item, since it will meet all the requirements of international standards.

We expect the export of cars from FSM to increase considerably, said director A. Wladyka in an interview with the ZYCIE WARSZAWY representative. We will be able to sell the "126" both through the Fiat network and independently, through trade agreements. Thus far, FSM has exported over 600,000 compact cars of various types through the Fiat network.

Fiat will grant a line of credit of \$50 million for the purchase of modern equipment for FSM and for the documentation necessary to modernize the "126." We have obtained this line of credit for 5 years on very favorable terms. This proves that our partner is satisfied with the production potential of FSM and with the progressive normalization of the Polish economy. The contract signed on Thursday and the credit granted by Fiat represent the first agreement of this type with Western countries since 1980.

The tradition of cooperation reaches back to the 1930's, when production began on the Polish Fiat 508 at the Warsaw PZInz [State Engineering Plant]. Systematic cooperation on the production of first the Polish Fiat 125p and then the Fiat 126p as well was begun 20 years ago. The terms of this cooperation are favorable for both sides. We now have signed an agreement to modernize the "126," but we also have discussed the outline of the concept of cooperation after 1991 with the Fiat representatives.

At first, the new 126-Restyling undoubtedly will be designated primarily for export, for there is a dire need for foreign exchange, explains director Wladyka. But thanks to this contract, FSM also gains the possibility of modernizing the production of its basic model, still to be the Polish Fiat 126p in its present version, for the next few years.

There will be an opportunity to speak in greater detail on these subjects next Monday during a press conference at the Bielako-Biala FSM.

#### New Fiat Production Plans

Warsaw ZYCIE WARSZAWY in Polish 16 Jul 85 pp 1, 2

[Article by Dariusz Piatkowski]

[Text] (Own Information) We still have not seen the new compact. During a press conference organized by the management of the Bielako-Biala Small Passenger Car Factory [FSM] on 15 July, much was said about the new model, its features and its parameters, but since not even a prototype of the



126-Restyling exists at this time, it was not possible to make an official presentation. It is known, however, from the contract concluded several days ago with Fiat, that the first copies of the modernized compact are to be driven out of FSM in the spring of 1987, and the entire contract will be in effect until 1991.

Meanwhile, the successor to the "126" will not come out before 1989 or 1990. Whether this will again be another model originating from Turin or whether it will be designed at the Bielako-Biala BESKID Plant is as yet unknown. CEMA partners interested in far-reaching coproduction cooperation with FSM are conducting talks on the probable production of the BESKID Plant. The proposals being discussed anticipate that in the various countries, small economy cars would be developed that would have different bodies but unified assemblies and mechanisms.

However, the BESKID or another new car succeeding the compact is something of the very distant future. Temporarily, the Polish Fiat 126p will remain the basic model at FSM for the next few years, in its present version. However, it will receive more and more elements from the already produced Face-Lifting modification that has a new dashboard, a key-activated starter, a more effective air ventilation system and the like.

For several years, i.e., from 1987 to 1991, two types of "126" will be produced at the same time at FSM: the Face-Lifting and the Restyling. The production of plants in Bielako-Biala and in Tychy will reach 210,000 cars per year at the end of this period. In the future, the idea of expanding further FSM to manufacture 250,000 to 300,000 cars per year will be considered.

As we already have reported, the Restyling is a far-advanced modernization of the compact, but its basic design and dimensions will remain those of the Fiat 126p produced until this time. However, for example, thanks to a change in the placement of the engine (which is liquid-cooled), there will be much added space for baggage behind the rear seats and a third door will be mounted in the rear. The 126-Restyling also will receive new wheels with dimensions of 4 x 13, making them somewhat larger than the present ones.

According to information provided by FSM chief director, engineer Ryszard Welter, the new car will consume considerably less fuel than the current "126," even in the "E" economy model.

The 703 cc-capacity, 27 km-horsepower motor will be a completely new driving unit engineered by Italian specialists. The compact equipped with this engine will consume about 4.5 liters of 94-octane gasoline when driving for 100 km at a speed of 90 km per hour, and about 6.5 liters in city driving. According to FSM tests, the current compacts respectively burn 6 and 7.4 liters of ethylene per 100 km under the same conditions. The new, stronger engine also should ensure better automobile pickup.

We asked the factory directors about the possibilities for making the 126-Restyling available to clients paying in zlotys and not only keeping it an export commodity to repay Fiat credit obligations. Director Welter

soberly explained that, in the initial period following the production startup of the modernized "126," we cannot expect more than 20 percent of these cars, i.e., about 12,000 vehicles, per year to be available on the Polish market. The credit must be repaid within the period stipulated in the contract.

However, zlotys are no less important for the factory than credit dollars. Production startup costs for the 126-Restyling and costs for modernizing FSM equipment, apart from foreign-exchange purchases, will require outlays of about 30 billion zlotys. FSM must earn this money itself or it must obtain credit from banks or its future clients. Therefore, the idea of issuing plant-originated, interest-earning obligations is being considered at Bieleko-Biala. Both institutions and private individuals will be able to buy this credit.

#### Fiat Representative Expresses Optimism

Warsaw TRYBUNA LUDU in Polish 16 Jul 85 p 6

[Article by Krystyna Szelestowska, TRYBUNA LUDU special correspondent in Italy]

[Excerpt] On the streets of Italian cities from Naples to the south through Rome and to the Fiat capital, Turin, everywhere one sees the compacts that are so familiar to us. Small plates engraved with the three letters FSM, the sign of the Small Passenger Car Factory in Bieleko, are affixed to the bodies of the cars.

Year in and year out, Fiat brings in compacts from Bieleko and sells them on the Italian market and in EEC countries. Last year it bought about 40,000 of these cars from us and this year it is expected to do the same. It has not produced this model itself for a long time. This division of "roles" presupposes agreements on cooperation concluded between Fiat and our automobile industry.

In Turin, I spoke on this subject with Zbigniew Szewczuk, director of our POL-MOT Plant, a man that has spend a considerable part of his professional life cooperating with Fiat and one that knows the "secrets" of our Italian partner through and through.

I was drawn to Turin by news of a new agreement to modernize the compact as well as by rumors about talks concerning the future of the Zeranle FSO [Passenger Car Factory] whose license for the Fiat 125p has expired, leaving it at an impasse.

#### The Rejuvenated Compact

The license for the Fiat 126 issued in 1971 expired in 1980. However, in 1979 a contract was signed regarding the so-called commercialization and modernization of the Fiat 126. In reality, this contract was a partial extension of the agreement and it regulated production-trade relations, including the modernization of the compact.

According to director Z. Szewczuk, Fiat projects that in 2 to 3 years, there will no longer be any interest in the old model Fiat 126 in its current version in Italy and throughout Western Europe. If export to the West ends, production profitability and even production potential will be called into question. The Bielsko plant will stop earning foreign exchange for import, modernization and the like.

Thus the decision for all-out modernization was born. The rejuvenated compact will receive a new, larger, 703 cc-capacity engine. It will be rebuilt into a three-door automobile and the baggage will be placed between the rear doors and the rear seat. It also should burn 1 liter of fuel less per 100 km than the currently produced model.

I was in Turin shortly after the signing of the contract in Warsaw, which took place on 11 July. Director Alberto Tiazzoldi had just returned from Poland, where he had discussed the final details of the new agreement. And so director Z. Szewczuk and I went to the main Fiat headquarters to hear the Italian view of the future of cooperation with our automotive industry, on location, from the source.

In greeting us director Tiazzoldi said, "I was guardedly optimistic, but now after returning from Poland, I think that I can drop the word 'guardedly.' Fiat has cooperated with Poland for over 60 years, specifically since 1971, when you first began to produce our automobiles on license. Cooperation during the postwar period is already celebrating its 20th anniversary. In 1965 we concluded the first contract for the Fiat 125. Later there were subsequent agreements. We would like to remain in the Polish market for another 60 years."

But the license for the Fiat 125 ended long ago, I emphasize to the Italian subject of my interview. The modernization of the compact merely prolongs its life another 4 or 5 years. What then?

He answers very cautiously, "We are business people. We are conducting serious negotiations. We have resolved the most pressing issue, i.e., that of extending the life of the Fiat 126. This is an expensive venture that requires a partial change in tooling and a change in production technology. We also will submit a proposal for a successor to replace the '126' after 1990."

#### What Sort of Proposals?

Talks also are being conducted (for the present they are only talks, as everyone in Turin tells us) regarding the production future of the Warsaw FSO.

On the eve of the outbreak of the Polish crisis, i.e., at the end of the 1970's, the production startup of an entire generation of new gasoline engines with a capacity of 1,600-1,800-2,000 cc was near. We already had bought the license from Fiat and we had received the documentation. However, the capital spending project was not implemented. The Italians and our specialists as well believe that we should return as soon as possible to the abandoned project, utilizing what is there and expanding to diesel.

Today, however, FSO is thinking primarily about an automobile with an intermediate engine capacity. Of course, Fiat is approaching us.

The offer, however, does not include the Uno, the most economical, most modern automobile, that has had a brilliant career and has improved the position of Fiat against the competition, increasing Fiat earnings. In 2 years, the Turin firm has broken its record and has produced a million Uno's. Now, threatened by competition, it is bringing out a new, 1,000 cc engine for the Uno, known as the Fire and constructed in cooperation with Peugeot.

Then why is the Uno excluded from consideration for FSO?

The answer of the Fiat representative is swift and no less diplomatic. "We are declaring the desire for real cooperation. We can begin to discuss supplying Poland with every model we have available. However, FSO first must decide which automobile it wishes to produce."

Fiat press spokesman Camillo Fre provides me with an indirect answer on why it is not the Uno, providing some details. This is a new-generation automobile manufactured by robots. In the welding division, for example, computerized robots replace humans; electronic equipment replaces humans in inspection. The instrumentation for Uno costs \$500 million, i.e., considerably more than the costs incurred during a normal model change. The automobile is selling like hotcakes and Fiat itself is handling the sale directly.

I understand. Our industry is not in a position to manage an extremely costly investment and very high technical requirements, and Fiat is not inclined to withdraw any export rights of ours, a basic condition for the purchase of a license that must be profitable and should earn money beyond this.

Then what real possibility do we have? A different automobile with an intermediate-capacity engine that FSO would produce using the equipment already in existence at Fiat.

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POLAND

## CEMA MACHINE INDUSTRY COOPERATION

Warsaw RZECZPOSPOLITA in Polish 12 Jul 85 p 2

[Report on interview with Eugeniusz Szatkowski, deputy minister of the engineering industry, by Ryszard Nalecz; date and location of interview not specified]

[Text] The engineering industry plays a principal role in the development of the entire economy, constituting the foundation for economic growth and scientific-technological progress in all branches and subbranches. Its role was accented at the recent 40th session of CEMA. All organs of the council were assigned the task of further developing production specialization and coproduction, particularly with regard to modern machinery and high-quality equipment, on a world technical level. A PAP reporter spoke on Poland's cooperation with CEMA countries in this field and on prospects for the future in light of the decisions made at the 40th session with Eugeniusz Szatkowski, deputy minister of metallurgy and the engineering industry. Here are the ideas he presented:

--The ties between our country and the engineering industry of other CEMA states emanate from participation in the work of the CEMA Committee for Affairs of Cooperation in the Engineering Industry, the four international economic organizations and other subbranch organs of the council. They concern cooperation in trade, industry and the scientific-technical area.

--The enterprises of our ministry participate in 72 contracts and agreements on international labor distribution within the CEMA framework. Of these, 42 are multilateral agreements. Last year the value of the export of our ministry's enterprises to the first payments area [socialist countries] reached about 320 billion zlotys.

--We expect that by 1990, cooperation within the framework of contracts and agreements between the particular subbranches and industries of Poland and CEMA countries will encompass about 350 products.

--Many forms of cooperation have been set up, beginning with joint work on construction developments to the joint production of finished products. Technical, technological and construction experiences will be listed more extensively. We will work to perfect and modernize products technically and to improve their quality, as well as to develop coproduction, in which special tasks will be embarked upon to render us independent of import from Western countries and to create our own joint production base.

--The ventures embarked upon aim to develop the export and import of specialized products, i.e., to serve mutual needs better.

--The further development of production cooperation requires, above all, its closer link with joint ventures whose goal is to accelerate scientific-technical progress. Nearly one-third of all tasks related to multilateral scientific-technical cooperation and one-fourth of all tasks related to bilateral cooperation between Poland and CEMA come under our ministry.

--We aspire above all to rationalize the consumption of raw materials, energy and fuels, to reduce the energy-and materials-intensiveness of production and to electronize, automate and robotize industry. During the meeting of the 40th session of the council, a general understanding was signed on cooperation in the field of so-called flexible production systems for the engineering industry and other industries. It provides for the creation of highly automated equipment systems for the various types of technological processes.

--The implementation of these ventures will enable the considerable modernization of production and the upgrading of its technical level; it will contribute to the improvement of the economic structure. It will make it more economical and it will render us more independent of the trade situation in Western countries.

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CSO: 2600/953

ROMANIA

CONTRIBUTION OF ECONOMIC BRANCHES TO FORMATION OF NATIONAL INCOME

Bucharest REVISTA ECONOMICA in Romanian No 31, 2 Aug 85 pp 22-23

[Article by Prof Dr I. Capanu and Lect Dr P. Wagner: "The Contribution of the Main Economic Branches to the Formation and Growth of National Income in Romania"]

[Text] The problems of national income have occupied and occupy a central place in the party's economic policy, in economic theory and practice. The documents of the Romanian Communist Party from the past two decades and the speeches of the party's secretary general, Comrade Nicolae Ceausescu, devote special attention to the problems of national income. The role and importance of national income and of the indicators that express its content are even greater in the current stage, when, throughout the economic activity, action is being taken to attain the objectives of the 13th RCP Congress with regard to increasing the role of the intensive factors in all fields of economic life, aspects that can best be characterized, planned and analyzed, in the main, on the basis of the indicators that express national income.

It is noteworthy that in the years after the ninth congress the dominant characteristic of our country's economy is its development at high rates and the substantial growth in national income. The choice of providing high rates of development through efficient economic activity is a trait of the party's economic policy, a policy to the devising of which the secretary general, Comrade Nicolae Ceausescu, has made a decisive contribution; this is the only way in which it is possible to attain the strategic objectives of economic and social development and of growth in the standard of living of the population.

The evolution of Romania's national income in the 1951-1985 period is characterized by continuity and stability in the growth, a dominant trait of the whole period of socialist development of the country. The national income in 1985 is 20 times higher than in 1950, with the average annual growth being nearly 20 billion lei, that is, 9 percent. With this rate, Romania is among the countries with high economic vitality. This rapid rate of growth in national income has permitted a reduction in the gaps that separate us from the economically developed countries.

The absolute growth in national income according to 5-year periods indicates the expansion of this process beginning with the 1966-1970 subinterval and

especially after 1970. Thus, the growth in national income achieved in the 1971-1975 period was higher than that obtained in the three preceding 5-year periods (1956-1970), and the growth in the 1981-1985 interval is nearly equal to that achieved between 1965-1975. One also notes the stability of the relative growth in national income, growth that provided for the doubling of the absolute level in an interval of about 8-9 years. The intense growth in national income has led to the ascending growth of national income per capita--by over 4-fold in the last 20 years. The absolute growth achieved in the 1971-1975 5-year period was equal to the growth obtained in the three preceding 5-year periods taken together (1956-1970).

Table 1. The Evolution of the National Income of the Socialist Republic of Romania in the 1965-1985 Period

Year	National Income (billions of lei)	Absolute Growth (billions of lei)		Relative Growth (%)		National Income per Capita (lei)
		Average	Total	Average	Total	
1965	146.2	--	--	--	--	7,585
1970	212.1	65.9	13.18	45.1	7.7	10,473
1975	361.9	149.8	29.96	70.6	11.3	17,035
1980	513.9	152.0	30.40	42.7	7.2	23,147
1985	720.8	206.9	41.38	40.3	7.0	30,675
Total:	--	574.6	28.73	493.0	8.3	--

Analyzing the economy's development after 1965 from the angle of the growth in national income and the factors that were the basis for this growth, one should note a number of elements that indicate the action of the factors of a qualitative nature, factors whose action is greater after 1970.

The 1966-1970 5-year period is characterized both by the outstripping of the growth in national income by the growth in gross national product, a fact that is reflected in the growth of the proportion of material expenses in the gross national product, and by the more marked growth of the technical and production potential in comparison with national income and gross national product:  $I_f > I_{ps} > I_{vn}$  [ $f$ , expansion unknown;  $ps$ , gross national product;  $vn$ , national income]. The mode of correlation of these synthetic indicators on the move in this interval is mainly the result of the intensification of the effort to equip the economy and to modernize its structure. Special problems connected with modernizing the national economy whose results are visible in the following 5-year periods were solved in this 5-year period.

The defining trait for the last 15 years is the faster growth of national income than of gross national product, of the investments made in the economy, and of the size of the value of the fixed assets existing in the economy.

The growth of Romania's national income by 575 billion lei in the last 20 years, thus by nearly 5-fold, its utilization for development and consumption according to the stage of development in which the country's economy was found and according to the objectives established for each particular stage, and the growth of the role of the qualitative factors in the economy's development



have been accompanied by profound changes in the population's standard of living. The drop in the indices of the outstripping of the rates of growth of national income and the indicators that reflect its utilization--the consumption fund and the accumulation fund--in the past three 5-year periods represents the synthetic expression of these changes. Thus, in the 1966-1970 period, the index of the outstripping of the average rate of growth of accumulation was over 2 times higher than that of consumption, but it has fallen from 1.4 in the 1971-1975 5-year period to 1.2 in the current 5-year period. In fact, the index of the outstripping of the rates of the two indicators can be viewed as a synthetic indicator of the economy's efficiency. It expresses to what degree the effort made to develop the economy is found in the growth of the consumption fund.

Romania's development in the past two decades and the profound changes occurring in the economy's structure are a direct consequence of the results obtained in the process of socialist industrialization. The consistent implementation of the policy of socialist industrialization of the country has permitted Romania to pass through several historical stages, from a country with a poorly developed economy to an industrial-agrarian country at the height of the process of development. The changes concerning Romania's development are reflected synthetically in the country's economic potential and in the structure of national income according to branches.

The objectives of the economy's development for each period and stage are subordinate to the long-term general objective established through the programs for economic and social development. However, each subinterval is characterized by certain features regarding industrial development. The essential problem in the country's industrial development consists of providing a sensible proportion between industry and agriculture; industrialization cannot be imagined without modern agriculture, which meets the consumption needs of the population and the needs for productive consumption and creates certain reserves for exportation.

The changes in the structure of national income according to branches of the national economy and the evolution of the contribution of industry and agriculture to the production of national income indicate the changes of a qualitative nature that have occurred in Romania's economy.

As follows from the statistical data, the changes on a branch basis have occurred mainly in favor of the nonagricultural sectors, especially industry. The growth of industry's role in the production of gross national product, associated with the fact that the material consumption in this branch exceeds the average consumption, has caused the change in the structure according to branches in favor of industry to be a factor that has led to the growth of productive consumption throughout the period.

The changes in the structure according to branches are reflected in the change in the contribution of the branches to the growth of gross national product, national income and material expenses. These changes bring out a basic trait of the development of Romania's economy, the marked growth of the role of industry, the branch which secures the introduction of technical progress and

which creates the conditions for the drawing of new natural and human resources into the economic circuit and the advanced utilization of them.

One notes the decline in industry's contribution and the growth in agriculture's percentage in the growth of national income and the material expenses. This process reflects the homogenization of the economy's development on a branch basis.

Table 2. The Contribution of the Branches to Forming the Growth in National Income and Material Expenses (%)

Branch	1966-1970		1971-1975		1976-1980	
	National Income	Material Expenses	National Income	Material Expenses	National Income	Material Expenses
Industry	32.0	77.6	73.6	74.7	63.3	67.2
Construction	13.2	9	6.5	6.5	9.3	12.2
Agriculture	-1.7	6.1	7.5	10.1	11.2	7.9

The characterization of the role of the branches in the growth of national income presupposes the correlation of their contribution to the formation of the growth in national income with the proportion that the respective branches have in economic potential and in its growth. The growth in national income can be analyzed in terms of a multitude of factors, grouped according to various criteria. The indicators that express fixed assets and manpower occupy an important place within them. Starting from this fact, it is necessary, first, to analyze the contribution of the branches to the growth in labor productivity and in efficiency in the use of fixed assets and, depending on the results obtained, to estimate the reserves existing in the field of raising the contribution of the branches to the growth in national income.

The analysis of the growth in social labor productivity in the last 20 years brings out some essential aspects, namely:

- a) The growth of the absolute level from one 5-year period to another, which expresses the stability of the relative growth.
- b) Industry's radical contribution to the formation and growth of labor productivity.
- c) The importance of the changes occurring in the structure of the population employed in the branches of material production for growth in labor productivity.
- d) The differing elasticity of labor productivity according to the changes occurring in the level of the technical equipping of labor in the branches of material production.

Up to 1965, the absolute growth in labor productivity achieved during a 5-year period was at most 6,000 lei of national income per employed person, but, in the past three 5-year periods, it reached levels that exceeded 16,000 lei per employed person. The main factor in the growth in social labor productivity

has been the steady growth in labor productivity at the level of the branches. The importance of the structural changes drops, although they have a percentage of about 30 percent in the growth in labor productivity. The contribution of the branches to providing the level of labor productivity has been associated with the evolution of the structure of the employed population according to branches, and industry's percentage has increased to the disadvantage of the other branches and, in particular, agriculture.

Analyzing the place of the branches in the growth in social labor productivity, industry stands out categorically through a contribution lying between 64 percent and 79 percent in the past four 5-year periods, therefore far above the percentage that it has in the employed population and in fixed assets. In contrast, agriculture has contributed to the growth in labor productivity to a degree of 5.7-7.2 percent, a percentage that is far below the level of the material and human resources that this branch possesses.

The growth in labor productivity has contributed to the growth in national income to a degree lying between 65 percent and 68.6 percent, and the change in the population employed in the branches of material production to a degree lying between 35 percent and 31.4 percent. The contribution of the two factors varies significantly from one branch to another according to the evolution of the population employed at the level of each branch (in industry the growth in the number of worker personnel has over 33 percent and in agriculture the decline in the employed population has negatively influenced the growth in national income).

In estimating the contribution of labor productivity to the growth in national income it is necessary to start from the fact that growth in labor productivity can be obtained in various ways. Thus, the technical equipping of labor and the efficiency of the use of technical potential must be involved in the analysis of its evolution.

Technical equipping has registered spectacular rises in the last two decades. Thus, for example, in the first three 5-year periods, technical equipping rose by less than 20,000 lei per person, but, in the 1976-1980 5-year period, the growth exceeded 53,000 lei per person. This evolution of the equipping of labor expresses synthetically the changes occurring in the national economy's structure according to branches, the results obtained in homogenizing the branches of material production from the viewpoint of technical equipping.

The evolution of the contribution of the branches to technical equipping at the level of material production varies significantly in the two basic branches. Thus, industry's relative contribution rises continually, but without attaining the levels held in the case of social labor productivity. In contrast, in agriculture's case, the contribution drops, it nonetheless being, in all years, above the percentage that it has in the achievement of the level of labor productivity, a fact that indicates the reserves for growth existing in this field and, implicitly, with regard to growth in national income. The correlation between technical equipping and labor productivity is achieved by means of efficiency. This means that the ratio between the growth in productivity and the growth in technical equipping expresses how much is paid for growth in labor productivity.

The analysis of the contribution of the factors to the growth in social labor productivity brings out the decisive role that the technical equipping of labor and the changes in the branch structure of the population employed in material production had. If the growth in national income is analyzed in terms of the size of the value of the fixed assets and the efficiency of their use, one notes the fact that the increase in the effort to raise the economy's technical potential was the main support for the growth in national income.

The calculations regarding the influence of the factors on the growth in national income reveal the fact that the growth in technical equipping and the changes occurring in the size of the employed population were factors that provided, for the most part, the growth in national income, with big reserves existing in the field of the efficiency of the use of fixed assets and the reduction of material consumptions expressed by the proportion of material expenses in the gross national product. Under the conditions in which the dimensions of production and of technical-material potential have had impressive rises, the reduction of material expenses, in general, and material consumptions, in particular, has become an important source of growth in national income. The party and state documents and the speeches of the RCP secretary general, Comrade Nicolae Ceausescu, bring out the importance of the reduction of material expenses. Although some results have been obtained in reducing the proportion of material production expenses, there still are big reserves in all branches of material production. Thus, in the 1966-1970 period, national income rose due to the reduction of the volume of material expenses by nearly 9 billion lei. Better results were obtained in the branch of industry, where the growth in net output due to this factor was over 25 billion lei. Energy consumption occupies a special place in the general context of the concerns for the reduction of material consumptions. The concern for utilizing energy as efficiently as possible fits as an essential component into our party's conception of utilizing material, human and financial resources with high efficiency.

The statistical data indicate the significant reduction in energy consumption per 1,000 lei of national income in the last 15 years. Nevertheless, there are big reserves for saving electric power in all fields of activity. The estimation of the reserves existing for the reduction of energy consumption also presupposes the comparison of their level with other countries. The indicator that is frequently used on an international level is the energy consumption per \$1,000 of national product or national income.

While the results of such comparisons can be viewed just as orientative, they still offer a picture of the amount of energy consumption per unit of national income. Despite the results obtained in the reduction of energy consumption, one notes that it is still higher than in the other developed countries. Hence there also results the special concern of our party and its secretary general for the substantial reduction of material and energy consumptions, for the faster growth of labor productivity and, in general, economic efficiency, for the utilization of all production factors with maximum results.

12105

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ROMANIA

## STRENGTHENING OF SELF-FINANCING IN ECONOMIC UNITS

Bucharest REVISTA ECONOMICA in Romanian No 31, 2 Aug '85 pp 18-19

[Article by Nicolae Savoiu: "The Continual Strengthening of the Self-Financing of the Economic Units"]

[Text] For meeting the requirements of maximum significance to the country's entire economic and social development with regard to operating the economic and financial mechanism with high efficiency and consolidating self-management and self-administration, the continual strengthening of the self-financing of the entire activity must constitute a priority objective in all the economic units. Thus, the necessity of increasing the concerns of all the staffs of working people for continually consolidating each enterprise's capacity to pay as soon as possible for the resources received from society and to form from internal resources their own funds for economic and social development and with a social and cultural character is highly topical.

During the current 5-year period, as a result of the development of the economic activity and the consolidation of the new economic and financial mechanism, the portion of the resources of the socialist units utilized to form their own funds has grown continually. The maximally efficient utilization of all the resources involved in the economic processes undoubtedly represents the major imperative for increasing the percentage of their own funds, in relation to the bank loan and other resources. However, the analysis of the activity performed in the enterprises brings out, besides this continual rise in the dimensions of the self-financing processes, the fact that the financial equilibrium of the economic units is regulated, to a degree that is not negligible, through bank loans. This reality--which is unfolding against the positive background both of the growth in the percentage of their own funds and of the speedup of payments--keeps topical the necessity of studying thoroughly and solving as suitably as possible the problems that appear in optimizing the ratio between loans and internal funds in the economic units.

The consolidation of the process of self-financing in the investment field. The improvements made in the strategy in the investment field and in the planning of, preparation for and execution of the investment process have caused profits, the amortization of fixed assets, and other internal resources of the units to have a big percentage in the total resources for financing investments. The fact that this favorable general evolution has occurred against

the background of the existence of still untapped reserves in the enterprises for utilizing with high efficiency the entire production potential available induces us to regard as viable the possibility of continually increasing their own funds in the total resources for financing the investments for development, even under the conditions in which all the investment activities involving development, including major development (which is now financed from the fund of the central), would be financed from the economic-development fund.

The development of the self-financing of circulating funds. The complete fulfillment of the profit plan and the further speedup of the rate of turnover of the circulating funds in each particular unit are of decisive importance for further improving the ratio between its own funds and the bank loans for production and circulation. The very connection that exists between these aspects dictates the necessity that the concern both for continually minimizing production costs and maximizing incomes and for following more carefully and solving more efficiently all the problems that appear in all phases of the reproduction process be increased in all the enterprises. We feel that greater attention should be devoted to solving the problems that appear in the final phases of the production cycles, more precisely, in the sphere of circulation, where the circulating funds operate in forms that usually do not permit the setting of them on the basis of standards and stock norms and where tendencies of relative growth are found relatively more frequently (especially in the case of invoiced and unpaid-for products, work and services).

Regarding the concerns for increasing the contribution of the economic and financial factors to further improving the ratio between loans and internal funds in the field of circulating funds, experience shows that this could be increased by identifying and applying new measures that would secure the fuller affirmation of the control function of finances and loans in the economy. In correlation with the progress achieved in organizing and carrying out the economic activity on all levels, the methods of planning the need for circulating funds and of setting and actually allocating the resources must always be governed by the necessity of control through the leu. However, practice shows that the global methods utilized at present, of determining the entire need for funds with the help of the rate of turnover, of planning and actually allocating the resources according to the total growth in circulating funds, and of granting the loans, as a rule, through a current account for providing the overall equilibrium between receipts and payments, do not permit in all cases efficient financial control over the setting and utilization of the circulating funds, in different functional forms of them. Consequently, at present, within the framework of the concerns for further increasing the role of the economic and financial factors, some specialists converge toward the opinion that the following are necessary: the distinct planning of the circulating funds subject to setting and of those that usually cannot be set; the coverage of the circulating funds set from profits to a greater degree and the corresponding reduction of bank loans.

In connection with the sources for meeting the need for circulating funds, it must be borne in mind that there still are situations in which the percentage of the loans is above the average in the economy, even in the case of units in the intermediate and final subbranches of industry, which usually have

relatively high profitabilities and great possibilities of increasing their own funds. The respective enterprises resort readily to loans for such activities, because their levels of profitability are far above the level of the interest on the loans. However, in view of the need for loans in the economy, the limited resources for making loans, the requirements regarding the growth of self-financing, and the obvious possibilities that these units have of improving the ratio between loans and internal funds, we are of the opinion that the possibility of bigger annual allocations from profits for covering the increases in circulating funds should be examined in such cases. At the same time, we also agree with the idea that it is possible for the circulating funds, determined on the basis of the stock norms and the standards for circulating funds, strictly necessary for fulfilling the tasks provided by means of the sole national plan, to be financed, as a rule, from the fund of circulating funds, formed from the profits achieved and the resources attracted, while the other stocks and expenses of the nature of circulating funds--winter stocks, seasonal, temporary and plan reserves and so on--established in accordance with the provisions of the national plan, would be financed through bank loans, in accordance with the Law on Finances.

In this case, the units in the primary branches of industry, especially in the extractive industry, electric power and so on, are in a special situation, in view of the relatively low level of profitability and profits. Of course, it should be pointed out that the emergence from this situation by means of a single element--that of growth in profitability--constitutes the most advisable way from an economic viewpoint. But the repeated investments that the mining enterprises, in particular, make to maintain production or to extend the operations downward and toward the edges of the deposits and to work the deposits of poorer ores increase the production expenses and the need for circulating funds (in comparison with the initial situation) and reduce the possibilities of raising profits and profitability. In the situation of these enterprises in the primary branches, it appears advisable--besides the basic measures, which involve the more marked growth of labor productivity through the improvement of the extraction and dressing technologies and the better use of the equipment on hand and the work force--to also examine the possibility of periodically revising the initial allocation and resetting and supplementing the fund of circulating funds, depending on the new production conditions. We feel that this could be done on the occasion of the periodic recalculations of the need for circulating funds or through the annual planning of them.

In our opinion, the necessity of concentrating the loans in the sphere of circulation, where the functional forms in which the circulating funds appear are influenced by factors that must be kept under as strict control as possible, also makes itself felt in connection with optimizing the ratio between loans and internal funds. Also in order to strengthen the self-financing of the economic units, we consider it useful to analyze the idea that the banks grant loans, not as a general resource for supplementing the internal funds, for rectifying the balance of the current account of the units, but through separate loan accounts, which would permit, in the process of execution, the subsequent supervision of the actual compliance with the loan's purpose, at least in the case of frequent and big loans. At the same time, we feel that it may be necessary for the methods of organizing the payments between the socialist



units to permit, to a greater degree, the banks to know more promptly the path of the documents and to step in more decisively regarding the discharge of the payment obligations on time by the recipients of products, work and services. Moreover, we regard as very timely the requirement that--with a view to providing the conditions for the suppliers of raw materials, supplies, liquid fuel, energy, chemical fertilizer, equipment, machines and installations, and so on to be paid for their products delivered or services performed in accordance with the plan provisions and in compliance with the legal provisions, on the dates and under the conditions set by means of contracts--the banks be authorized to pay their equivalent value from special loans granted to the economic units that remain insolvent after utilizing the loans provided through the current legal provisions. Of course, these special loans are to be granted within the total volume of loans approved by the management, with the financial and banking bodies having to examine, together with the managements of the units and of the higher-ranking bodies, the causes of the insolvency and to establish measures for straightening out the activity, providing financial equilibrium and paying back the loans received by these units.

Along with the continual improvement and perfecting of the working techniques, of the methodology of making loans and payments, and of the links between the enterprise, the central and the bank, meant to help, to a greater degree, to improve the way in which the economic flows unfold, with positive effects on economic self-administration, we consider it important to point out that the center of gravity of the measures and initiatives regarding the consolidation of self-financing must be put in the sphere of the own effort of the enterprises, which must secure the utilization of the entire potential right from the phase of substantiation of their own plan and the income and expense budget and, in the process of execution, must pursue with maximum responsibility the precise implementation of the actions and measures established to raise efficiency.

In the consolidation of self-financing, in the optimization of the ratio between the internal funds and the borrowed funds in each enterprise, we stress, on this occasion too, the necessity of increasing the importance of the considerations that involve profitability and solvency. In this framework, we feel that, from the viewpoint of the enterprise's solvency, the following relationship could be regarded as a minimum:  $\text{internal funds/borrowed funds} = 1$ , since it expresses, in the most general way, the guarantee that at any time the bank loans and the payment obligations can be covered completely from internal resources. Of course, the optimization of this ratio can be achieved in proportion to the growth of internal funds.

From the viewpoint of profitability, the problem is more complex; if we take the bank loan as an example, it is clear that its utilization does not have economic efficiency for the enterprises with profitabilities at or below the level of the rate of interest. In such cases, the loan not only does not help to increase their own funds but, on the contrary, reduces them. For the enterprises with relatively high profitabilities, the situation is the opposite. However, bearing in mind that in economic practice the problems of this nature are much more complex, to us it seems necessary, in estimating the ratio between the internal funds and the borrowed funds, to also take into account:



the ratio between the monetary reserves and the immediate payment obligations (which must not be below 1); the structure of the borrowed funds and the way in which they evolve, with an accent, within them, on reducing the attracted resources (suppliers, creditors), given the fact that the reduction of bank loans, by increasing the attracted resources, cannot be considered an economic solution for optimizing the ratio between loans and internal funds; the necessity of varying the interest on the loans granted for circulating funds, depending on the level of profitability, established through prices (which would correspond to the requirements of economic equity and, in addition, would encourage to a greater extent the units with high profitabilities to increase their own funds). This does not mean that the problem of pursuing and achieving certain correlations in the structure of the funds utilized is not posed for the enterprises with relatively low profitabilities. From this viewpoint, we feel that for any enterprise--and, all the more, for the enterprises with low profitabilities--the ratio between the monetary reserves existing in accounts and the immediate payment obligations is critical, since the evolution of the ratio between the internal funds and the borrowed funds, in the course of executing the plan, also depends on this to a decisive degree.

Bearing in mind that, in our opinion, the fact that in the period of planning and execution all the necessary connections are not made between the enterprise's situation at the start of the period (according to the trial balance sheet or balance) and that planned for the end of the period (through the income and expense budget) constitutes a problem in carrying out the financial activity in the field of circulating funds, for optimizing the ratio between the internal funds and the borrowed funds, it also appears necessary to draw up partial balance-sheet projections. We contend that if the management bodies of the enterprise and of the competent departments would utilize an instrument of this nature (detailed to a great degree according to the structure of the funds and resources), they would be able to establish, with more knowledge of the facts, the measures that are necessary, in the course of execution, to fulfill the provisions in the income and expense budget regarding the structure of the circulating funds and the resources from which they are covered. At the same time, this could permit the closer supervision and more efficient achievement of the monetary ebb and flow, which would lead to the achievement of the reserves in the account, at a level correlated with the changes provided for the other elements of the current assets and liabilities.

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## ROMANIA

## ISRAELI COMPANY TO ESTABLISH FACTORY

TA081010 Tel Aviv DAVAR in Hebrew 8 Sep 85 pp 1, 2

[Article by Hayim Bi'or]

[Text] The Tadiran Company is scheduled to establish a factory for the manufacture of nickel-cadmium batteries with long life duration in Romania.

The Romanians first raised the idea of Israel establishing the factory in their territory during Prime Minister Shimon Peres' visit to Bucharest about 2 and a half years ago. Afterward the proposal was discussed during the visit to Israel of the Romanian deputy minister of trade. The visiting personality met here, Inter Alia, with the secretary of the Histadrut holding company, Hevrat Ha'ovdim, Dani Rosolio, and, following this, a Hevrat Ha'ovdim delegation was invited to visit Romania.

The Hevrat Ha'ovdim delegation which included, among others, Dani Rosolio, Moshe Olnik (currently one of the joint directors of the Bank Hapo'alim) and Arye Bar-Ner of Koor-Sahar, met with the Romanian top economic echelons, including those ministers in charge of the fields of electronic and chemical industries, and it was within this framework that the negotiations over the establishment of the battery factory in Romania continued.

Since Romania suffers from a grave shortage of foreign currency and is only able to pay with goods, it was agreed between the Israelis and their hosts that payment for the establishment of the factory would be made within the framework of an exchange agreement. However, the Romanians demanded that the recompense they would pay should take the form of the same type of product, that is, they should also establish a factory in Israel. The Israeli delegation objected to that type of arrangement and insisted that the Romanian recompense should be in goods needed by the Israeli economy.

The Romanians recently agreed to alter their position in accordance with the Israeli demand. After protracted bureaucratic redtape, the ground has now been laid and the deal has reached the final stages.

It will be noted that the manufacture of nickel-cadmium batteries is not common in the countries of Eastern Europe, and from this follows the importance Romania attributes to the purchase of the technology and the production of this product by Israel. Romania will have to import the raw materials for the production of the batteries from Western Europe.

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ROMANIA

NEED TO RESPECT CONSUMPTION NORMS

Bucharest REVISTA ECONOMICA in Romanian No 31, 2 Aug 85 p 11

[Article by Dr D. Fundatura: "The Consumption Norms--Rigorously Substantiated and Observed"]

[Text] One all-important direction of action with profound implications in the plan-fulfillment activity is that regarding the rational use of raw materials, supplies, fuel and energy with a thrifty spirit and the continual reduction of the consumptions set, as one of the best and most important sources of supply. Into this context there also go the actions involving the revision of a large number of consumption norms, the establishment of new consumption norms in accordance with the technical and technological conditions in the enterprises, and the very strong expansion of the normative basis of the plan; thus, from about 40,000 consumption norms and standards approved by means of the plan in earlier years, over 63,000 were approved for 1985. In this way, better conditions were created for complete, sensible substantiation of the need for material resources according to enterprises, industrial centrals, and ministries, of the technical-material base of the plan for economic and social development.

At the same time, the inclusion of a large number of consumption norms and standards in the plan led to the taking of concrete steps, for each material and product, in each manufacturing section and even at each workplace, that ensured, in the great majority of the cases, the keeping of the actual consumptions (material and energy) within the maximum limits set by means of the norms. This made it possible in 1984, for instance, for the total expenditures per 1,000 lei of commodity output in national industry to be 9.3 lei lower than in 1983 and the material expenditures to be 6.1 lei lower.

Nevertheless, in some enterprises, both last year and in the first 5 months of this year, the specific consumptions were exceeded for various products; thus, last year, in the machine-building enterprises the metal-utilization coefficient was 9.5 percent higher than the planned level, which meant that several hundred thousand extra tons were consumed for the manufactured production. Or, in the metallurgical industry, the fact that the coefficient of extraction of rolled metal was 3.1 percent over the prescribed level was equivalent to an additional consumption of 458,000 tons. In addition, as was pointed out at the Joint Plenum of the National Council of Working People and the Supreme

Council for Economic and Social Development, although the consumption norms were analyzed a year ago with all the management councils in the central bodies and suitable measures for reducing them were established, some ministries have not yet taken the necessary steps to apply them, an attitude that is completely unacceptable and must be totally eliminated.

The rational administration of resources of raw materials and energy, the strict observance of the approved consumption norms and standards, and the continual reduction of them constitute a constant of our party's economic policy. As the party's secretary general, Comrade Nicolae Ceausescu, pointed out at the joint plenum, "We must take every step to ensure that all units stay within the material consumptions in conformity with the norms set and that further action is taken to devise improved norms with lower consumptions." First, this is because the consumption norms and standards are the basis for determining the need for raw materials, supplies, fuel and energy included in the plan and for balancing the material balances. However, the consumption of bigger amounts of raw materials and supplies, beyond the approved norms and standards, leads inevitably to the failure to cover other needs provided in the plan and to the affecting of the entire material equilibrium of the plan.

Second, in the competition on foreign markets, those products that have the best technical, qualitative and economic-efficiency performances win; to furnish for exportation various products obtained with higher consumptions of materials than those achieved by foreign partners means to lose, to get less valuta per ton of raw material incorporated into these products, since no one pays extra just because a bigger amount of raw material, fuel and energy goes into the respective product. Third, any percent of reduction in consumption and thus in material expenditures is reflected directly and positively in growth in national income--the sure and stable source for continually developing and modernizing the national economy, for increasing the material and spiritual well-being of all the working people.

The material balance sheets have a special role in the sensible utilization of resources of raw materials and energy; covering the entire circuit of the materials, according to various phases of manufacturing and consumption, the material balance sheets indicate the amounts of raw materials and supplies that are to be introduced into the manufacturing processes, the ones that will go into the products made, as well as the amounts and structure of the recoverable materials. Through the functions that they perform, the material balance sheets are not only instruments for planning the utilization of material resources but also instruments for overseeing and pursuing the rational administration of raw materials and supplies at a higher degree of utilization. Due to this fact, it is necessary that, in the future too, greater and greater attention be devoted to sensibly preparing the material balance sheets, to implementing them in conformity with the provisions, to raising the degree of substantiation of the technical-material supply plan.

The Law on the Typification and Standardization of Products, Constructions and Technologies, the Technical Setting of Material and Energy Consumptions, and the Raising of the Quality and Technical Level of Products was drawn up and approved for implementing the decisions of the 13th party congress regarding



the raising of the technical and qualitative level of products, the reduction of material and energy consumptions, the advanced utilization of all resources and the more marked growth of labor productivity. The measures established by means of the new law have in view the fact that, as was pointed out at the 13th party congress, by 1990, about 95 percent of Romanian products must be, from a technical and qualitative viewpoint, at the level of those existing on a world plane and at least 2-5 percent must be over this level; at the same time, through the introduction of new technologies, the degree of utilization of raw materials, supplies, fuel and energy will have to rise by about 70 percent in comparison with 1980.

In general, through the measures provided and through the actions that will be undertaken, it is intended that, in 1990, our country will consume 20 percent less energy resources per unit of national income. In order to achieve this, in all the enterprises and economic units it is necessary to intensify the work of technical redesign of products regarding the reduction of their size and weight, the expansion of the range of technical performances, the adoption of new manufacturing technologies, especially the "clean" technologies, which utilize completely the raw material entering into productive consumption, the continual modernization of the manufacturing list by assimilating into production materials and products of superior conception that utilize material and energy resources better, and the replacement of costly and imported materials with domestic ones.

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ROMANIA

COORDINATES FOR DEVELOPMENT, MODERNIZATION OF AGRICULTURE

Bucharest REVISTA ECONOMICA in Romanian No 31, 2 Aug 85 pp 13-15

[Article by Dr Gh. N. Iosif: "Coordinates of the Development and Modernization of Romanian Agriculture"]

[Text] A basic branch of the national economy, agriculture has made great progress in all its sectors of activity. The rate of growth of the gross output has risen continually in both the vegetable-production branch and the animal-production branch. The agricultural gross output was 1.90 times higher in 1983 than in 1965 and it was 1.13 times higher in 1984 than in 1983, which illustrates the correctness of our party's policy in the field of agriculture.

The rates of growth are different. While the vegetable-production sector had a 1.69-fold rise, the gross output in zootechny rose 2.26-fold. As a result, the percentage of animal production--an essential characteristic of modern, intensive agriculture--which represented 36.8 percent of the gross output in 1965 (in prices comparable to 1963), came to 44.2 percent in 1983. The qualitative changes occurring preface the orientations in the directives of the 13th RCP Congress to the effect that zootechny will form 46-48 percent of Romania's agricultural gross output by the end of the next 5-year period. These changes will influence substantially the structure of food consumption, in the sense of the growth of products of animal origin.

A Strong Technical-Material Base

Essential changes are drawn from the analysis of the mode of land use. In the 1965-1984 period, the country's agricultural area rose by 172,700 hectares due to the introduction of nonagricultural areas (131,300 hectares) into the agricultural circuit and the clearing of forest areas (41,400 hectares) covered with brush, which were inefficient from an economic viewpoint. Changes in the percentage of some categories of land in the agricultural area are also associated with these changes of a quantitative nature. The country's agricultural area changed in the sense of the more marked growth of some categories of land: arable land by 53,600 hectares, pastures by 96,800 hectares, meadows by 26,600 hectares and fruit-tree orchards and nurseries by 8,200 hectares.

The rational use of the main means of production in agriculture--the land--depends on many factors. The steps taken by the leadership of our party and

state have helped to improve in all respects the mode of use of land resources. Along this line of thinking, special attention has been devoted to expanding the arable areas, by utilizing uncultivated land, to breaking up poorly productive pastures and meadows, to reclaiming sandy and saline land, to rationally using the agricultural land in the forest perimeters, and to expanding the new plantations of vines and fruit trees on sloping and eroded land and on sandy land, which cannot be utilized economically by other crops. A special accent is being put on the work of land improvement, diking, drainage, control of soil erosion and so on.

Modern, intensive agriculture presupposes the expansion of the areas set up for irrigation. This area represented only 229,000 hectares in 1965, but it came to 2,612,300 hectares in 1984. The establishment of the most suitable and most economic structure of the mode of land use and the continual raising of the land's fertility also go among the main actions performed to more efficiently utilize land resources. In recent years, significant changes have occurred in the mode of land use, through the growth of arable land and of that occupied by vines and orchards. In 1983, these categories of land, taken together, made up 70.4 percent of the agricultural area, which exceeds the level in many European countries with advanced agriculture, underscoring the possibilities of practicing agriculture with a marked degree of intensification.

Viewed from the angle of the structure of the agricultural area according to forms of ownership--state agricultural units, agricultural production cooperatives and individual farms--it should be noted that the first two types of units are prevalent in all the categories of use of agricultural land, especially the higher ones; on the individual farms there are big areas occupied by natural pastures and meadows (about 857,000 hectares at the end of 1983) and fruit-tree orchards and nurseries, which confers on them favorable conditions for increasing the animal populations and developing fruit farming.

A graphic picture of the mode of utilization of land resources is given by the changes that have occurred in the structure of cultivated arable land. The statistical data demonstrate a clear orientation toward intensive land utilization, an aspect thrown into relief by the drop in the area occupied by cereals for grain, along with the rise in the areas occupied by leguminous plants, technical plants, potatoes, fodder plants, strawberries, and plants for producing seeds and seed trees. These qualitative changes have contributed not only to the intensive use of the areas but also to the multilateral, harmonious development of all agriculture, to the placement of our country among those with modern, intensive agriculture.

Irrigation has a special role in the utilization of the land's entire potential. The enormous efforts made in this field, from the viewpoint of investments, have put Romania among the countries with the highest percentages of irrigated areas in Europe. The areas set up for irrigation, and those that are to be set up on the basis of the complex program drawn up in this regard for the period up to 1990, demonstrate the consistent choice of the policy of our party and state for the efficient utilization of all the resources for growth in agricultural production. In 1965, in the structure of the areas set up for irrigation, vegetables had the highest percentage (27.1 percent),

followed by the growing of corn for grain (27 percent) and of alfalfa and clover (16.5 percent). In the following period, along with the expansion of the irrigated area, there was an improvement in its structure, with high priority being given to land meant for the growing of cereals (43.5 percent), especially corn, and of sugar beets and soybeans.

The considerable rise in the areas set up for irrigation occupied by cereals has permitted the obtaining of higher outputs for these crops, with influences of the most favorable sort, among the measures that, under the specific conditions in our country, contribute to the intensive and multilateral development of agriculture, to the obtaining of high and constant yields by counteracting the negative effects of dryness. The achievements in this field illustrate the great possibilities that our socialist agriculture has of rapidly introducing technical progress on a wide scale into production.

Favorable conditions for obtaining high yields at a constant level have also been created and are being improved by the suitable equipping of our agriculture from a technical viewpoint. The development of the agricultural-machine industry has permitted the providing of an advanced technical base in a short time, capable of allowing the whole set of tasks specific to each crop and each species of animal to be done at a high qualitative level and in optimum periods. The more and more marked diversification of agricultural equipment, machines and tractors has contributed to the wide-scale mechanization of the work in the growing of cereals and technical plants, to the raising of labor productivity in general, and to the easing of the physical effort of the worker in agriculture. The technical base with which agriculture has been equipped has also permitted radical changes in the agronomical practices applied; the conditions have thus been created for introducing and generalizing in practice the most advanced gains of agricultural science and technology. The continual concern that our party and state and, personally, the party's secretary general, Comrade Nicolae Ceausescu, are showing for agriculture is demonstrated by the tasks outlined for the machine-building industry and the research and design institutes with regard to achieving tractors and agricultural machines at the level of the newest gains of science and technology. The number of agricultural tractors came to over 174,000 in 1984 and the number of self-propelled combines for harvesting grain cereals came to 58,000. The number of mechanical sowers, cultivators and plows has risen greatly. In comparison with 1965, there have been increases in the number of machines for spreading chemical fertilizer (by over 3-fold) and machines for sprinkling and dusting with mechanical traction (by over 5-fold). In addition, there has been a considerable rise in the number of tractor-drawn combines for harvesting fodder (2.6-fold) and presses for harvesting and baling hay and straw (2.4-fold). As a result of the upward evolution of the fleet of tractors, the arable area per physical tractor has dropped continually. It fell from 121 hectares in 1965, to 81 hectares in 1975, to 67 hectares in 1980 and to 59 hectares in 1983.

One central concern for continually developing the technical-material base of agriculture has been the improvement and supplementation of the system of machines, which would provide high labor productivity and would permit the levels of the incomes of the workers in agriculture to approach the levels of



those in industry. The equipping of agriculture with mechanical means at a rapid rate, the modernization of the fleet of machines and tractors, and the improvement of the structure of the energy base constitute aspects of the process of intensifying production, of raising its level and the labor productivity in agriculture.

Determining the main directions of the development of the technical base for production in agriculture, the directives of the 13th RCP Congress provide as a main objective the mechanization of the production processes in zootechny, viticulture, fruit farming, vegetable farming, the growing of technical plants, and land improvements. The improvement in the system of machines and tractors includes all the existing sectors and forms of ownership; it is necessary for the technical equipping of labor to be uniform in all counties and zones of the country, so that the same work would take an approximately equal labor consumption, regardless of the zone in which it is done. The design and execution of multifunctional machines, capable of performing several tasks in a single pass, represent an important qualitative leap that our socialist agriculture has made.

The growth of the degree of universality of agricultural machines and tractors has permitted the execution of the respective work under conditions of high economic efficiency, caused by the growth in the number of hectares of normal plowing done by the same machine. The reduction of the period of inactivity of agricultural machines and equipment in the course of a year has as an effect a more uniform distribution according to tasks of the inventory value that must be recovered through amortization. The system of machines for spiked cereals and for corn, besides having been supplemented with a number of new machines, has undergone genuine improvements from the viewpoint of the technical and economic characteristics, such as different working widths for combines and higher working speeds for sowers, to which, at the same time, the increase in working width is also added. In the field of animal husbandry, the expansion of the mechanization of the main activities has been pursued: the preparation, transportation and distribution of fodder, the supplying of water, the milking of cows, the shearing of sheep, the removal of excrement, the disinfection of shelters and so on.

The transition to the use of unconventional forms of energy in agriculture has represented a constant concern of the specialized scientific research. The further utilization of these forms of energy to a greater extent represents an important leap in the use of technical means and facilities. The replacement of hydrocarbon-consuming machines and installations with ones that use--as the case may be--wind energy, solar energy and geothermal energy represents essential changes in improving the production processes in agriculture. The expansion of the technologies for using biomass to produce energy and for turning animal excrement into biogas constitutes new sources for saving unconventional energy in agriculture.

In the current 5-year period, along with the concentration of considerable material means for the overall mechanization of agricultural work, the due importance has been accorded to utilizing the existing technology at its full potential.

The administration of fertilizer has been another factor regarding which action has been taken with much consistency in recent years in agriculture. The consumption of chemical and natural fertilizer has had high rates of growth. In 1965, the total chemical fertilizer (in active substance) was 266,400 tons, but it had an increase of over 4-fold in 1982 and of about 5-fold in 1984. Its structure has changed in accordance with the crop structure. And now the highest percentage is held by fertilizer based on nitrogen, which represents over 60 percent of the total chemical fertilizer consumed; potassium fertilizer has also had an upward evolution. However, fertilizer based on phosphorus shows a drop in relative volume. It represented 41.3 percent of the total in 1965, just 35 percent in 1980 and only 27 percent in 1983.

Year by year, as a result of the development of the production capacities in the respective subbranch of the chemical industry, our agriculture has been provided with bigger and bigger amounts of fertilizer, in an ever more varied assortment and of better and better quality. The distribution of chemical fertilizer according to sectors of agriculture has also been improved; in the past, the biggest amounts of fertilizer were distributed to the agricultural units in the state sector, but, in recent years, the deliveries to the agricultural production cooperatives have risen considerably, which is in accord with the percentage that this sector has in all of agriculture.

The contribution of chemical fertilizer to raising the land's productive level must be judged not just according to the total amount and the structure of the fertilizer used, but especially according to the amount used per unit of area. Thus, in 1965, there were just 18 kg of chemical fertilizer in active substance per hectare of agricultural land, but, in 1984, the amount was about 5 times higher.

The orientation of fertilizer production in accordance with the crops and the soil and climatic conditions in our country has been of special importance for the intensive and multilateral development of agriculture. On the basis of the scientific research and the results in practice, the most rational proportions for using fertilizer according to the requirements of agriculture have been established. The more and more marked introduction of chemical fertilizer into production does not exclude the utilization of the big internal reserves of the socialist farms, which have big amounts of natural organic fertilizer. Moreover, experience and practice show that the biggest crop increases are obtained when chemical fertilizer is used together with organic fertilizer.

#### **The Main Objective: the Raising of the Outputs**

The effect of improving and expanding the technical-material base in agriculture was concretized in the growth of the outputs per hectare and per animal. For the main agricultural products, the average in the first 3 years of the current 5-year period indicates that, in comparison with the 1966-1970 5-year period, the yields per hectare were 1.54 times higher for wheat and rye, 1.58 times higher for barley and two-row barley, 1.72 times higher for corn, 1.17 times higher for beans, 1.13 times higher for sunflowers, 1.77 times higher for potatoes and 1.52 times higher for alfalfa. All these things led, in

1984, to an output of 23.6 million tons of cereals, 908,000 tons of sunflowers and rape, 407,000 tons of soybeans, over 7 million tons of sugar beets, nearly 5.9 million tons of fall potatoes, over 6 million tons of field vegetables, nearly 2.1 million tons of fruit and over 1.7 million tons of grapes.

Table 1. The Total Vegetable Agricultural Production for the Main Crops

Vegetables	1965	1975	1980	(thousands of tons)	
				1984	1984/1965
Grain cereals, total	12,601.3	15,265.8	20,200.2	23,600	187%
Sunflowers and soybeans	564.1	745.4	835.5	908	161%
Soybeans	2.7	212.8	447.9	407	150.7-fold
Sugar beets	3,013.2	4,905.1	5,562.0	7,000	232%
Fall potatoes	1,918.1	2,307.3	3,676.0	5,900	308%
Field vegetables	1,654.5	2,391.7	3,439.1	6,000	363%
Fruit	1,157.5	1,101.2	1,417.6	2,100	181%
Grapes	921.3	1,181.9	1,312.6	1,700	185%

Big jumps also occurred in the field of animal husbandry: by 8,982,000 for hogs, by 5,326,000 for sheep, by 79,165,000 for poultry and by 363,000 families for bees. The increase in the populations also permitted increases in the main zootechnical products. The average outputs in the first 3 years of the current 5-years period were distinctly higher than the annual average in the 1966-1970 5-year period. Thus, the output of meat in live weight was higher by 1,041,000 tons, the output of milk by 10,157,000 hectoliters, the output of wool by 8,818 tons and the output of eggs by 4,054 million units.

Table 2. The Evolution of the Animal Populations (at the Start of the Year)

Animals	1966	1976	1981	(thousands of head)	
				1984	1984/1966 (%)
Cattle, total	4,935	6,126	6,485	6,752	137
including: cows, buffalo cows, and helpers	2,328	3,028	3,188	3,099	133
Hogs, total	5,365	8,813	11,542	14,347	267
including: brood sows	461	821	1,083	1,197	260
Sheep, total	13,125	13,865	15,865	18,451	141
including: ewes and ewe lambs	9,852	10,398	11,341	10,922	111
Goats, total	807	445	347	684	85
including: nanny goats	660	402	309	461	70
Poultry, total	40,085	78,626	97,800	119,237	297
including: layers	26,500	40,116	43,787	45,480	172
Bees (thousands of families)	916	955	1,117	1,279	140

The expansion and generalization of the elements of technical progress have imparted a strong vitality for raising agricultural production. The results obtained in 1984 constitute the basis for agricultural outputs at a higher level. The record outputs for cereals demonstrate the significant reserves

that the state and cooperative units possess for continually raising the yields per hectare. In 1965, about 1,970 kg per hectare were obtained for wheat, but, in 1984, the yield was about 1.7 times higher. The cereal output achieved on the average in 1981-1984 was about 2 million tons higher than the average in the 1976-1980 period; successes were obtained in the development of zootechny, with the animal populations reaching 8 million cattle, 14.9 million hogs and 20 million sheep. Along with the growth in the number of animals, their quality was also improved as a result of the growth in the percentage of improved breeds. As a result of the complex measures to intensify and modernize animal husbandry, a significant rise in the output per animal and in the average dressed weight was obtained, helping to increase the total animal production and the deliveries to the state supply.

#### The Improvement of the Correlation Between Land Resources and Production Levels

The structure of the mode of land use does not always remain the same, since various categories can be given another purpose in accordance with the changes that occur in the planned structure of production. The results of scientific research create new means for shifting the extensive categories of use to intensive categories of use. This can be done particularly by turning the categories of unproductive land, or that with poor production potential, into cultivated land by means of land improvements.

Through the implementation of the irrigation program, the facilities will cover 4 million hectares in 1985, so that 5.5 million will be reached in 1990, which will mean the attainment of practically the entire irrigable potential. Our country will thus be in first place in Europe as regards the area set up for irrigation, ahead of other countries with old traditions in this field.

Along with the expansion of irrigation work, a special accent is being put on expanding the agricultural areas. Besides the utilization of eroded or eroding land, drainage represents the main source in this regard. By the end of the last 5-year period, over 40 percent of the land contained in this category was diked and drained. The measures established by means of the national program are also oriented in the direction of expanding the areas set up to combat excess moisture. In 1984, for example, drainage work in local systems and facilities was done on an area of 333,400 hectares, and the supplementation and renovation of old systems, especially in the northern and western zone, were done on an area of 153,200 hectares. As a result, at the end of the current 5-year period, the drained land will total about 3,761,500 hectares.

The work to combat soil erosion is being done at a rapid rate, which represents a considerable growth of the actions for advanced utilization of land resources in the zones with uneven ground. Last year, drainage work was done on 140,600 hectares and work to combat soil erosion was done on 297,700 hectares. The unprecedented development of the land-improvement work necessitated efficient measures that would ensure its rational placement over the territory, as a sure basis for attaining the planned level in developing agriculture and the economy on the whole.



The attainment of the basic objective of the 1986-1990 5-year plan, provided in the directives of the 13th RCP Congress, necessitates the firm continuation of the policy of modern structuring of the national economy, through which the raising of the efficiency of social labor is secured, an essential condition for the continual and multilateral progress of the country. The growth of the production forces in agriculture at a steady rate in the next 5-year period finds its illustration in the consistent orientations in the investment policy. In the next 5-year period, agriculture will receive a volume of over 190 billion lei in investments.

The directives of the 13th RCP Congress devote special attention to the continuation of the process of intensive development and modernization of agriculture, orienting the efforts in the direction of the better organization and use of the entire agricultural area of the country and the application of the gains of advanced agricultural and zootechnical science. Romanian science is called upon to make its contribution to the development of agriculture on modern bases, to the achievement of steady and stable agricultural outputs, regardless of the natural conditions.

The results obtained in agriculture in the first 4 years of the current 5-year period create all the conditions for implementing, in the main, the decisions of the 13th congress and the national conference of the party. Romania will thus obtain new and important successes along the line of increasing the well-being of the whole populace.

In conformity with the provisions of the directives, the average annual outputs in the next 5-year period will be higher than those in the current 5-year period: by 24-30 percent for cereals, by 30-43 percent for sugar beets, by 30-35 percent for fall potatoes, by 38-41 percent for live meat, by 46-51 percent for cow's milk, by 12-19 percent for eggs and by 27-35 percent for wool. Significant increases are also provided for the other agricultural products. The strong upsurge that agriculture will have in the next 5-year period will put Romania among the countries with modern, intensive agriculture. All these things will contribute to a substantial rise in the agricultural and food outputs, thus contributing to a greater diversification of the consumption of products per capita, to the growth of the well-being of all the inhabitants of the country.

12105

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ROMANIA

INCREASED USE OF RIVER TRANSPORT VESSELS

Bucharest REVISTA ECONOMICA in Romanian No 31, 2 Aug 85 pp 16-17

[Article by Dr Emil Gavrilă and Dr Emilia Tanasescu: "Higher Indices in the Operation of River Transportation Vessels"]

[Text] The utilization of all production capacities and all material means on hand at the planned parameters constitutes one of the big reserves for raising--quantitatively and qualitatively--the plan targets. If we bear in mind the fact that in the past few years the country's entire technical inventory has been strongly developed and modernized, the matter of using it as efficiently as possible, in each sector and economic unit, can help abundantly to achieve, under optimum conditions, the planned physical output, to raise labor productivity and to reduce production costs. As the party's secretary general, Comrade Nicolae Ceausescu, has repeatedly pointed out, the complete use of the capacities that we possess, the keeping of all fixed assets in perfect operating condition, and the continual raising of their technical and qualitative level must represent important concerns of each economic unit, on which the general level of fulfillment of the plan provisions depends. In this context, the utilization of the fleet of available vessels at full capacity occupies a special place within river transportation.

Qualitative Trends and Changes in Utilizing the Fleet of Vessels

In the years of the building of the socialist economy, along with the intense implementation of industrialization, the stock in Romania's river fleet has undergone significant changes, both from a quantitative viewpoint and from a qualitative viewpoint, with over 70 percent of the capacity of the fleet devoted to freight transportation and about 65 percent of the capacity of the passenger vessels being less than 10 years old (table).

The river fleet devoted to freight transportation has had the biggest rises--a natural result of the rapid growth in the volume of freight to transport, growth generated by the expansion of the Danubian transportation links. At the end of 1984, the fleet of towboats and pushers was over 118.4 percent bigger than in 1970 and their traction power showed a nearly 3-fold rise. Of the unpowered vessels, the biggest increase was in scows, barges and hoppers, whose number rose about 1.5-fold and whose capacity rose by 218 percent.

Table: The Evolution of the Capacity of the Romanian River Fleet

Indicators	Unit of Measure	1975	(1970 = 100)	
			1980	1984
The capacity of the river fleet:				
Vessels for passengers	number	110.2	118.0	105.1
	places	116.6	115.7	106.4
Towboats and pushers	number	121.0	151.0	218.4
	thousands of horsepower	153.4	223.0	393.6
Unpowered vessels,	number	129.4	172.3	230.9
including:	thousands of tons	148.2	215.2	329.0
Scows, barges and hoppers	number	133.8	174.5	246.7
	thousands of tons	151.1	219.0	317.9
Tankers	number	87.0	151.6	87.0
	thousands of tons	103.2	168.2	148.4

The analysis of the process of developing and modernizing the river fleet shows some qualitative trends and changes meant to influence decisively the technical operating characteristics and the economic and social effects of utilizing the fleet of vessels. Thus, the average capacity of the unpowered vessels and the average power installed in the towing and pushing motor vessels rose by 142.4 percent and 244.3 percent, respectively, in the 1970-1984 interval, favoring the reduction of the expenses in loading and unloading the vessels, the formation of strings with high tonnage and the corresponding reduction of the towing expenses per ton of freight transported. At the same time, the equipping of the fleet with some types of vessels in big series (barges of 1,500-2,000 tons, towboats of 500-1,000 horsepower and pushers of 1,640-2,400 horsepower) improves the maintenance and operating conditions and permits the mechanization of the loading operations and the reduction of production costs.

The reduction of the period of inactivity of unpowered vessels in the absence of towing capacities and the raising of the commercial transportation speed are directly connected with improving the ratio between the traction fleet and the unpowered fleet, whose level in 1984 was 16.7 percent higher than in 1970. This trend is to grow in the next 5-year period, through the providing of almost 430,000 tons of unpowered vessels and 150,000 horsepower of towboats and pushers, with the ratio becoming 2.87 at the end of 1990, in comparison with the 5.5 that it is at present. At the same time, the traction fleet was equipped, in particular, with pushing vessels which permitted the expansion of the system of navigation by pushing and which provide high economic efficiency. The raising of the transportation speed, the attracting of a wider range of goods to this type of transportation, and the handling of smaller lots of goods in river transportation entail the intensification of the equipping of our river fleet with self-propelled vessels, for general and specialized goods, a process begun in 1984.

The river passenger fleet, too, has had both an increase in the percentage of vessels of small and medium dimensions and an improvement in its structure from the viewpoint of the capacity per unit of transportation. The action of

entire transportation system, the average transportation distance is constantly falling, a trend that will also manifest itself in the future. In this way, the growth of river traffic entails the necessity of shortening as much as possible the period of inactivity of the vessels for loading and unloading operations in ports, in order to increase accordingly the time under way with a load, reducing the duration of the total transportation cycle along with raising the coefficient of utilization of the vessels in operation.

The performance of transportation is also conditioned by the growth of the average technical speed and the time under way with a load. The equipping of the fleet with new vessels, with better technical and functional characteristics, the application of new technologies for forming the strings, and the improvement of the general navigation conditions lead directly to the growth of the towing fleet's average technical speed under way with a load.

Both the growth of the degree of utilization of the vessels and the general results of the river fleet are influenced by the changes occurring in the structure of the traffic and of the various flows of goods and passengers that compose it, by the degree of balance in the ratio between the goods exported and imported and between the goods and passengers transported upstream and downstream--ratios that can eliminate or can raise the percentage of the running of the vessels without a load or without a string. The existence of unbalanced transportation links--such as the Mahmudia-Galati link for metallurgical limestone and the links between the extraction points on the Danube for quarry and ballast-pit products and the ports of delivery--leads to the growth of the percentage of the running of the vessels without a load, with undesirable implications regarding the economic and financial indicators. The efficient utilization of the fleet of vessels presupposes a continual improvement in the degree of intensive use of them, expressed by the size and evolution of some indices, such as the average performance per unit of capacity and the loading coefficient per unit of capacity.

#### The Optimization of the Transportation Links

The very mobilizing tasks placed before river transportation by the higher party and state leadership are being materialized in rapid increases in river freight traffic, which will be over 2.8 times greater in 1990 than in 1980. However, since the capacity of the fleet that is to achieve this level of traffic will rise only about 2.4-fold, it becomes clear that the complete meeting of the transportation requirements must be secured especially through the improvement of the technical and economic indicators and indices of operation of the fleet, an action on which there depends and in which there lies the transition to a new quality of Romanian river transportation. In order to do this, there must be measures to optimize the river transportation links, especially in the sense of balancing the flows upstream and downstream and reducing the runs without a load, by attracting new and bigger lots of goods for river transportation, of creating new transportation links for passengers, of expanding the activity of nautical tourism, and of expanding combined transportation (river-railroad and/or automotive). The volume of the performance of transportation will be influenced positively by the utilization of the Danube to a greater degree, by the intensive exploitation of the Danube-Black Sea



modernizing the fleet has in view the complete meeting of the domestic river-transportation requirements, as well as the continual growth of the percentage of Romanian river vessels in the performance of our country's import-export transportation and in the handling of foreign transit between the various Danubian ports to as great a degree as possible.

The growth of the transportation capacity of the river fleet depends directly on organizing and using it as rationally and scientifically as possible in the transportation process, so as to continually improve the indicators of operation of the river vessels, obtaining a relative rise in transportation capacity without additional investments and, implicitly, the meeting of the transportation requirements of the national economy to a greater and greater degree, under conditions of high efficiency.

#### The Improvement of the Technical and Economic Indicators of Operation of Each Vessel

The analysis of the activity of the river transportation fleet, by studying, under the given technical and economic conditions, the combined influence of the different factors and indicators specific to this field--such as the transportation capacity of the fleet of vessels, the coefficient of utilization of the fleet of vessels, the average transportation distance, the route of the goods and passengers, the percent of the time spent under way with a load by the vessels, and so on--indicates the existence of big reserves that, activated, can lead to the growth of the economic and social effects of river transportation.

The improvement of these technical and economic indicators of operation of the fleet of vessels entails the raising of the efficiency of the activity of movement proper of the goods in space--from the producer to the consumer--and, implicitly, of the performance of transportation in general. The volume of the performance of transportation is influenced by the size of the fleet of vessels in operation, with these two indicators being in a directly proportional relationship, in the situation in which all other conditions remain unchanged. Depending, in its turn, on a number of factors, of which the most significant ones involve the fleet's technical condition, the level of this indicator, expressed by the coefficient of utilization of the fleet of vessels, shows a slight rise. The utilization of the existing reserves depends directly on providing sufficient capacities properly suited to the repair and maintenance of the fleet of vessels, as well as the necessary spare parts. The index of utilization of the fleet of vessels was also improved by intensifying the efforts of the navigating personnel to perform maintenance and repair work aboard the vessels, thus eliminating the movement of the vessel to the repair units.

The river transportation fleet's activity depends to a great extent on the average transportation distance; the more it is reduced, the greater the volume of goods transported will be (assuming that the action of the other factors remains unchanged). Under the conditions of our country, in which coasting transportation has the overwhelming percentage in river freight traffic (over 97 percent), and as a result of the efforts to optimize and rationalize the

Canal, by the establishment of new waterways--the entry of the Poarta Alba-Midia-Navodari branch into operation and the achievement of the Bucharest-Danube canal for the most part--by the development of existing economic units and by the placement of new units in the vicinity of the waterways.

The construction of the new Sulina port, in which high-capacity seagoing ships can be partly unloaded, facilitates the intensification of river transportation in this sector, as well as the achievement of a significant volume of transit for third parties by the Romanian fleet. In order to avoid the movement of strings downstream without a load, it is possible to analyze the advisability of transporting with river vessels goods for exportation that would be loaded onto seagoing ships in the Sulina or Constanta-Sud Agigea port.

The improvement of the fleet's activity and the growth of river traffic under conditions of high efficiency are directly connected with promoting and expanding the modern technologies--packaging, palletization and containerization--that permit the overall mechanization of the handling of goods in ports, the raising of the rate of flow of the traffic, the reduction of the transshipping time, and the expansion of combined transportation. The raising of the efficiency of the activity of river transportation is conditioned by the continual growth of the qualitative level of the work force involved in operating and maintaining the fleet of vessels. Along these coordinates go the raising of the level of training and the intensification of the actions for multilateral training of the navigating personnel, which confers greater professional mobility on them and permits the reduction of the size of the crew.

The intensification of the entire activity of river transportation and the continual growth of its efficiency are conditioned decisively by the organizational framework created and by the manner of concrete application of the new economic and financial mechanism in the field of river transportation. The interdependence between the periods of utilization of the means of transportation and the turnaround time, with direct implications regarding the transportation cost and the efficiency of river transportation, entails the expansion of the area of application of economic and financial self-administration at the level of the navigation sections, for each particular port and vessel, with them becoming economic units with targets of their own, a total supply of worktime and an income and expense budget of their own. Thus, conditions are created for autonomous records of the expenses and incomes that are achieved, with the respective units being directly interested in reducing production costs and increasing their incomes, in intensively using the transportation capacities with high efficiency and stimulating the worker personnel to raise labor productivity. At the same time, it also becomes possible to keep track of the expenses according to links, orienting the decisionmaking factors better in establishing the ways and measures to reduce them and to raise accordingly the efficiency of the activity of the river fleet.

12105

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ROMANIA

BRIEFS

**WATER MANAGEMENT RESULTS--**Bucharest AGERPRES 30/8/1985--Romania has paid special attention these last decades to the management of the hydrographic basins through damming, river adjustment and riverbed deepening works. Numerous multipurpose works were done, ensuring water supply to the population, industrial zones and farm areas, flood control, electricity generation, fish farming and entertainment. River adjustment and damming works helped protecting against floods almost two million hectares of farm land, 1,512 localities including over 100 larger towns, like Alba Iulia, Arad, Tirgu Mures, Medias, Sighisoara, Tirnaveni, Satu Mare, Vaslui, Slobozia, etc., and over 4,600 industrial units. Arranged were also multipurpose storage lakes totalling more than 1.65 million cu.m. of water, which supply with water towns and industrial zones. Over 4,000 purification units were built in view of keeping the river water clear. [Excerpt] [Bucharest AGERPRES in English 1214 GMT 30 Aug 85]

**POARTA ALBA MIDIA CANAL PROGRESS--**Bucharest AGERPRES 30/8/1985--Fast-pace construction operations are under way on the future Poarta Alba-Midia-Navodari Ship Canal, a branch of the Danube-Black Sea canal, which was commissioned last year. In two key points of the future navigable waterway--the locks at Navodari (km 25.47) and Ovidiu--excavation works were concluded and concrete started being cast. At the same time, construction works finished on 8 km of the canal, as another 10 are to be completed until the end of the year. It will be 31 km long, 35-50 m wide at the bottom, and 5.5 m deep. In a first stage, it will handle a traffic of roughly 5.5 million tons of commodities a year, a volume that might rise to 15 million tons. Road and railway bridges will be erected over the canal at Poarta Alba, Ovidiu, Luminita and Midia. The building of the canal implies the excavation of some 86 million tons of earth and rock, as well as the dredging of lakes Mamaia and Tasaul which will be traversed by the canal. The canal is envisaged to go on line in September next year. [Excerpts] [Bucharest AGERPRES in English 1330 GMT 30 Aug 85]

**HYDROPOWER PLANTS ON OLT--**Bucharest AGERPRES 4/9/1985--Work is going on at a brisk pace on the five power stations being built on the lower course of the Olt. At Draganesti, the river was diverted to another course so that construction of the dam may now start, at Ipotesti the first power unit is being assembled and expected to become operational this October, at Frunzari the powerhouse foundations are made ready, at Rusanesti the concrete flood bed has just been completed whereas at Izbiceni it is being cast. No less

than eleven power plants for a total 363 megawatts and an annual production of 747 million kw-hr are being built on the Olt, downstream from Slatina and upstream, past Brasov. There are plants at Rimnicu Vilcea, Daesti, Govora, Riurenii, Ionesti, Zavideni, Babeni, Turnu, Calimanesti, Dragasani, Slatina, Strejesti, Aricesti. Others were constructed on its tributaries (the Lotru and the Sadu-Cibin) and together the twenty hydroelectric plants with a total capacity of 1,242 megawatts supplying 3,165 kw-hr a year. [Excerpts] [Bucharest AGERPRES in English 1047 GMT 4 Sep 85]

DANUBE-BLACK SEA CANAL--Bucharest, AGERPRES, 26/8/1985--A new train on ships, comprising one tow-boat and four barges of 3,000 t each, carrying iron ore for the Galati Iron-and-Steel Combine, entered through the Agigea lock the Danube-Black Sea canal, on August 26. A six-barge train passed through the lock at Cernavoda from the Danube into the canal sailing to the Constanta Sud Seaport, the same day. The two trains raised to 6,000 the number of ships--tow-boats, barges, passenger ships, pleasure boats, etc.--that have passed through the two locks of the canal--at Cernavoda and Agigea--since the inauguration on May 26, 1984. As for the goods traffic the books of the Danube-Black Sea Canal Authority record for the same period ten million tons of carried commodities. The main share is held by the ships carrying iron ore for the Galati and Calarasi Iron-and-Steel Combines, and those carrying chemical fertilizers, phosphates, rocks, gravel and other building materials. The canal, whose construction took eight years, is 64.2 km long and cuts the distance between the Danube and the Black Sea by some 400 km. With a 70-90 m width at the bottom and a 7 m depth, it allows for the two-way traffic of tow-boats with six barges of up to 3,000 t each, and sea- and river-going ships of up to 5,000 dwt, at a speed of 8-9 km/h. The Canal can be sailed by merchant and passenger ships of all states in the terms set by Romanian law. The end-users are bound to observe the Canal transit rules and regulations and bear the costs for services according to tariffs in force. [Text] [Bucharest AGERPRES in English 1930 GMT 26 Aug 85]

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YUGOSLAVIA

EXPORT INEFFECTIVENESS OF LARGE CROATIAN FIRMS NOTED

Zagreb START in Serbo-Croatian No 430, 13 Jul 85 pp 18, 20

[Article by Drago Buvac: "Giants and Pygmies of the Yugoslav Economy"]

[Excerpts] From time to time, in tiresome economic statistics, some trivial and seemingly insignificant figure flashes, and immediately dispels the patterns of previous views. In searching for the current economic difficulties and their causes in Croatia, for example, two such trivial and unusual facts emerged:

--From the podium of the Croatian Assembly, Engineer Vjekoslav Srb presented an analysis of how 29 large production organizations -- responsible for 69 percent of industrial production in the republic -- were exporting only 5.9 percent of their production to the convertible market. Some renowned names in this industry are not even exporting 5 percent of their production.

--Entering data on the economic performance of Croatian opstinas into a computer, the Economic Institute in Split arrived at a surprising ranking. The one in first place was not one of our well-known industrial centers, but rather a small and until recently undeveloped opstina, Ozalj. The ranking furthermore shows an apparently unexpected order, in favor of the less well-known opstinas, but also a rather striking change in their position, especially during this economic crisis.

What makes these data unusual and significant? Well, let us try to reexamine our own economic patterns in light of them.

According to the data for the last few years, the share of the exports of Croatian industry in the total value of its annual production was about 15 percent. About 30 of its largest collectives, with more than two thirds of the production and from all indications with more social capital invested, are exporting nearly 3 times less than the average for exports. In the strategy for opening up to the world, it was precisely these collectives, giants as far as we are concerned, that were predetermined to be the advance exporters -- the ones that were supposed to draw the rest along behind them. Certainly they have the strongest personnel and scientific-research potential for such a role. It is no secret that they also obtain bank credits more easily. When people battle today over the future foreign exchange system, the interests of

the large organizations are undeniably the pointer on the scale of political decision-making. Under the umbrella of all these systemic and political protections -- of which they have never been deprived -- our industrial giants are doing extremely badly in exports.

The same thing could also be concluded on the basis of the so-called territorial principle. Haven't our strongest opstinas, as industrial and political centers, assembled the best personnel, and the strongest banks and scientific research institutes? But the impartial computer has deprived them of this political "varnish," showing how the data regarding the efficiency of their operation are nevertheless bad.

One more thought suggests itself with respect to the paradox of the two above-mentioned analyses. The giants are not regularly the most successful economically even in the developed capitalist economies. They have a strong political lobby in order to preserve their positions and privileges. A sort of version of a political lobby is also observed in the self-managing socialist economy. Haven't well-known names in our political life "sponsored" the construction of large industrial projects that afterwards turned out to be unprofitable? Large enterprises also have their patrons. From the sociological-political aspect, it has been interesting to keep track of certain prominent politicians and the work collectives that they visited the most, as if these were their electoral base, where they had the best support from the working class, in accordance with a territorial or industrial principle. There has even been the case of a linkage between political positions and those of directors. Won't such work organizations also receive corresponding support from a prominent politician when they need to obtain a quick credit for paying salaries (in order to avoid a strike), investment loans for new shops, or even influential political support for the credit or foreign exchange system that suits their interests best? These are the rules of political life, and the task of a good politician is to push for the economic organizations, sectors, and trends that he believes will contribute the most to economic and social progress. In this context, however, the question comes up of whether only the large enterprises, the major industrial giants, deserve such a political lobby, or whether Cedo Grbic remains one of the rare "unpopular advocates" of more rapid development of small-scale industry.

The burden of the size and accordingly the political protection and intensive development of the industrial giants is one of the ideologized schemes of economic life. Its roots lie in the axiom adopted that a large-scale economy or a gigantic enterprise is already, by the nature of things, an enormous market, on one hand, and on the other, economically more profitable, in view of the law of lower expenses for large-scale series production.

The axiom has been very acceptable in socialist construction. It originated in a large country, in a large economic area, the Soviet Union, with the pushing of socialist industrialization. It was necessary to "overtake and surpass capitalism" with the construction of large hydroelectric stations, and metallurgical and metal-manufacturing giants. The concentration of production, with major monopolies, in the industrially most developed capitalist countries has confirmed only the economic correctness of such an

orientation. These, however, are the laws of the industrial revolution and its development, into the tracks of which the rest of the socialist countries also fell, including the Yugoslav economy.

So that there will be no misunderstanding about "underestimating" the large ones, which is never worthwhile, one should recall the following: the large transnational and national companies, as well as the large economies, are the main centers of the postindustrial period. What occurs in them still remains the center of attention in the scientific-technological revolution, economic changes, and even economic and political domination in the modern world. This, however, no longer gives them the automatic right to a special political status as the ones a priori responsible for economic progress, since that is what has exposed them to new reexamination. Even a huge national economy and its enormous economic area are becoming less of a guarantee of business success.

Of course, a cursory glance, at least at the superficial layers of the profound turmoil in the world economy, cannot claim to provide answers as to why the largest industrial enterprises in Croatia are poor exporters, or why the large industrial opstinas have poorer economic results. The symptoms of world experiences are also concealed in our jealously preserved unique features, however.

Although we do not have world-famous industrial giants, the concentration of Yugoslav industry is rather high. It has not even been disrupted by the formation of OURs [organizations of associated labor]. It is dominated by medium-sized organizations of associated labor [from 250 to 1000 employees] and 196 organizations with more than 1000 employees. According to data from 1982, small industrial enterprises are really rare: there are only 1646 with 60 employees or less, and they employ only about 58,000 of the total of 2.3 million industrial workers. Even the most industrially developed countries could envy us for such a "dominance" of small-scale industry! One comparison is very symptomatic. In Japan's strong economy, with its irresistible exports, about 71 percent of all employees and somewhat more than half of total industrial production are associated with small businesses (small and medium-sized enterprises with up to 300 employees). If one takes a similar index for Yugoslav industry, only 32 percent of those employed in industry work in enterprises with up to 250 employees.

Is such a high degree of concentration of Yugoslav industry -- which neglects small business not only within its own ranks but also in handicrafts -- economically efficient? If this same industry speaks "from within," according to the data for its distribution by size, then it is difficult to find an affirmative answer. The largest economic enterprises have poorer economic results than the average or small enterprises. In 1982, the 21 largest organizations of associated labor, with more than 2000 employees, had a purchase value of the basic assets per worker that was 22 percent higher, but the social product per worker was 12 percent lower than the industrial average. They also had lower salaries, and the largest losses. The case of economic efficiency in construction is a drastic one. Work organizations with more than 2000 employees had almost twice as many basic assets per worker, but also nearly twice as low a social product per worker, compared with small

construction enterprises with less than 15 and from 15 to 30 employees.

These data should be taken as an illustration of the existing situation, which requires more detailed research -- not as a hymn to small business. But it is not their fault, as confirmed by the above-mentioned experiences elsewhere in the world -- small enterprises operate profitably not only in services and following large corporations; with their innovations, adjustment to the market, and assimilation of modern information sectors, they constitute a challenge to the giants themselves.

For this reason, our disputes about the advantage of small or large-scale business, the private or social sector in small business (instead of its true socialization), fragmentation and large systems, the advantages of centralization or decentralization (a priori and without an analysis of reality) are only an anachronistic loss of time in the face of the breakthrough of the period of information science. No economy, system, or enterprise can be large enough to guarantee favorable business results. Every economy, technological system, and enterprise should be put to the test of the world and domestic markets, so that through this test they can find their optimal structure and organization and see where large enterprises and small enterprises are needed, where technological centralization is needed, and where creative initiative and decentralization are needed, and finally, where to put "social capital" and personnel potential, in which new economic sectors and territorial areas. The ideological preoccupation with large enterprises and with protecting them, as the predetermined representatives of progress, is only a barrier to restructuring the self-management economy.

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YUGOSLAVIA

PLANS FOR DEVELOPING KOSOVO COAL RESERVES

Belgrade EKONOMSKA POLITIKA in Serbo-Croatian 19 Aug 85 pp 18-19

[Article by Dragan Nedeljkovic: "Coal: Reaching Agreement on Kosovo"]

[Text] The meetings in Novi Sad and Pristina this summer have revived once again the initiatives for joint use of coal deposits in Kosovo, that is, for construction of thermal electric power plants based on that coal. The Coordinating Committee of the Electric Power Organizations of the Republics and Provinces Interested in Joint Investments To Build Electric Power Facilities Using Lignite in SAP [Socialist Autonomous Province] Kosovo, as this body established 6 years ago is officially called, has again been revived and commissioned to prepare the specific documents (self-management accords and possibly a separate agreement) during the autumn. It remains to be seen and heard whether these new initiatives will bear fruit, when the essential elements for reaching agreement have not changed.

Back 6 years ago, that is, the electric power organizations of Croatia, Slovenia, Macedonia, Serbia proper and Vojvodina expressed a willingness to build thermal electric power plants jointly in Kosovo. The so-called 2,100-MW Program, which was confirmed once again this summer, arose out of their needs and the potential of the coal deposits in Kosovo.

That program calls for building another 800 MW in Kosovo by 1995, and 1,250 MW between 1996 and the year 2000 to meet the needs of the electric power organizations. Now the needs of SAP Kosovo over that period has also been defined, so that an additional 300 MW would be built in each of the periods. That means new thermal electric power plants in SAP Kosovo totaling 2,650 MW. The coordinating committee of the interested electric power industries of the republics and provinces has been intensively engaged in making the preparations: studies have been made of the coal deposits, of their characteristics, of the equipment for strip mines and the thermal electric power plants that would best suit the quality of the coal, of the water supply, of air pollution prevention, of revitalization of the mines when the coal has been exhausted, and a number of other things. The Kosovo electric power industry has prepared for each meeting a new problem needing to be studied, so that preparation of the detailed plans and studies has been drawn out.

"Misunderstanding" or ...

Since the deadlines are short for preparing the plans and making preparations for construction, and the studies have dragged out, the Federal Executive Council intervened. A vice chairman of the Federal Executive Council [SIV] paid a visit to the Executive Council of SAP Kosovo in order to talk about the possibilities for carrying out this program. The official statement of the chairman of the Executive Council of SAP Kosovo to the effect that the established and proven coal reserves of 300 million tons are indispensable to the province for development of its own electric power industry struck like a bolt from the blue. The message in this statement was that Kosovo needed for its own development everything that up to that point had been studied jointly and for which plans and studies had been made, so that it was quite understandable that the work of the coordinating committee of interested electric power industries died out. No one even attempted to mention that the programs concerning construction of thermal electric power plants in Kosovo had been drawn up on the basis of data concerning at least 10 billion tons of coal.

It later turned out that there had been a "misunderstanding" at that meeting: the datum on coal reserves was accurate, but only concerning reserves of the existing strip mines "Dobro Selo" and "Belacevac," but not concerning total lignite reserves, as it had been construed. Several studies have been made of lignite reserves in Kosovo; a few years ago the Kosovo Electric Power Industry negotiated with a firm from Switzerland on building thermal electric power plants with capacities of 4,200 and 4,800 MW with a view to the exporting of power, and the proving of coal reserves was part of the preparation of that transaction. The contract was not concluded because of the high investment and the energy situation in western Europe, but all the necessary studies were completed so that realization might be begun, it was agreed, at a suitable moment. According to some interpretations, however, the talks with the foreigners on the export of power were conducted in order to arouse the interest of domestic electric power organizations and to speed up agreement concerning joint construction.

The obvious collision of conceptions and interpretations of the various moves made by the competent people in Kosovo extends even beyond the programs for construction of new thermal electric power plants and the partners with which this would be done. This is a part of a broader lack of agreement among specialists concerning the present situation and future of the fuel and power industry and of coal. While some feel that coal should be used intensively during this century, while waiting for new technologies in the next century to provide an abundance of energy which coal cannot compete with, others are of the opinion that it is better to save the coal, preserving it for the time when more can be obtained from it and it can be used more widely. In addition, in view of what has happened in Kosovo in recent years, one should not exclude even the extreme notions of preserving coal reserves for the future, that is, for altered political conditions in the province.

Yet it would seem that we should look elsewhere for the main reasons for the failure of the efforts over many years to reach agreement concerning joint use of lignite in Kosovo. Above all in the economic relations established in the

fuel and power industry and the separateness of the republic and provincial electric power industries and perhaps it would be better to speak of the entire separate economies. It is difficult to find an interest and prospect for joint construction of thermal electric power plants in Kosovo if these programs mean that a significant natural resource in Kosovo will be used, involving a plethora of problems such as water, smoke, ash, destruction of large areas of fertile land, while the power will go to other regions of the country as a clean and high-quality form of energy stimulating overall development. Especially since this natural resource is not realizing its economic value--today the price of a ton of coal in Kosovo is a few dollars, while according to the Strategy for Long-Range Development of the Fuel and Power Industry and other documents on straightening out economic relations in the fuel and power industry a ton of coal ought to cost five or six times as much. The bitter truth is that this situation suits some people, that artificial divisions are being stubbornly held to, that the realignment of economic relations in the fuel and power industry is being constantly put off.

The fact is that it is relatively easy to reach agreement on the technical details and their evaluation in the talks concerning joint use of lignite in Kosovo. The cost per megawatt of installed capacity is either known or can be computed, and that is also true of the cost of the strip mine, the cost of the long-distance transmission line or the substation. What is not known is the value of the natural resource--more precisely, how much will be paid for the coal, is the province to be ensured any benefit from this and what the size of that benefit will be. Nor is it known who is competent to establish this or determine it, and a comparison with the world, with the world market, as is the case with petroleum, is persistently being avoided in the case of coal and power. It is obvious that differing interests and conceptions are interwoven, and no sort of effort at agreement can reconcile them.

#### How Large Are the Reserves?

Is all of this a sufficient reason for the backing and filling over the basic fact, the lignite reserves in Kosovo, the fact on which all else must be based? The coal reserves in Kosovo have not been explored only for the talks with foreigners. A host of studies have been written, and there has even been a specific study on the division of the commercial fields in Kosovo and Metohija in order to arrive at total reserves. Since these are exact figures we are dealing with, it is strange that almost every study gives different data, so that agreement among the specialists has not been reached concerning the reserves. The most recent study, subject to very strict criteria, has established lignite reserves in Kosovo between 9 and 11.7 billion tons, and in Metohija between 2 and 2.8 billion tons. In the Province of Kosovo, then, there are between 11 and 14.5 billion tons of lignite. It is expected that in coming months the work that is now under way will make the exact figure known, that is, the experts will agree on the size of the reserves.

There is a good possibility of a surprise in that this study will say that in Kosovo alone there is more coal than the Strategy for Long-Range Development of the Fuel and Power Industry has established for the entire country. This is thought to be the result of more recent explorations, of updated figures,



but also of different views concerning domestic energy resources and development of the fuel and power industry. The study, which was financed by the Community of the Yugoslav Electric Power Industry, analyzed all actual coal reserves in Yugoslavia to meet the needs of thermal electric power plants and other consumers. According to that study the coal reserves are considerably larger than was established by the Strategy (as of the end of 1983), and the reserves in Kosovo comprise half of the Yugoslav reserves.

#### Only Kosovo Is Uncertain

The last stage is to prepare the medium-term and long-range programs for development of the fuel and power industry. And in the Strategy for Long-Range Development the fuel and power industry and the electric power industry in particular are based to the end of the century on the use of water, coal and nuclear power. New projects have been defined already or are under construction for all the coal basins except Kosovo. Construction recently began on "Kolubara B," the Drmno TE [Thermal Electric Power Plant] and the second phase of the Uglevik TE are under construction, the contract has been let for building the Bitola III TE, and construction of the Tuzla V TE is in the stage of preparation. The possibilities for building new coal-fired thermal electric power plants in this period are thus exhausted, but the entire Agreement on Development of the Fuel and Power Industry up to the end of the century is pointless unless it establishes what will be built when in Kosovo. The 2,100-MW Program in Kosovo, which has now been extended to 2,650 MW, is the largest and most important part of the agreement, and without it there is no agreement.

In a month, 2 at the latest, agreement has to be reached, precise deadlines set, and the capacity of thermal electric power plants to be built in Kosovo determined. In spite of the annual vacation season the coordinating committee of interested electric power industries of the republics and provinces has been working hard, and the intention is to get the Federal Bureau for the Plan, the Federal Secretariat for Energy and Industry and the Federal Executive Council actively involved. Are the new studies and tight deadlines sufficient arguments for taking the decisive step in reaching agreement on Kosovo? If this period is allowed to slip by, complete uncertainty will be left as to whether and how the coal deposits in SAP Kosovo will be used.

[Box, p 18]

#### The Present Topic of the Talks

According to the official position of the Kosovo Electric Power Industry communicated in the meetings in Novi Sad and Pristina, lignite reserves in the central area of the Kosovo basin and in Metohija are being offered for joint construction by the interested republics and Province of Vojvodina. New studies and technical and economic documentation first need to be prepared for both deposits, including investment programs concerning the siting of the power plants, ecology, water supply, the necessary quantities of coal, etc. In practice this means that several years are needed for those studies and for preparing the documentation, which means that the deadlines for the new



medium-term plan would not be met. However, since the new projects should be built and power furnished over the next 5 years, talks are now under way concerning a new solution.

The plans of the Kosovo Electric Power Industry, that is, call for revitalizing projects for the thermal electric power plants Kosovo A, building two new power generating units each with an installed capacity of 300 MW at Kosovo B, and the corresponding coal mines by the end of the century to meet its own power needs, the needs of the chemical industry and general consumption. Yet the Kosovo Electric Power Industry has not provided the funds for those programs, and over the entire 15 years up to the year 2000 it will have surpluses of capacity and electric power in its thermal electric power plants. The offer was made so that the interested electric power industries would put up their own funds to participate in these programs on the principle of pooling labor and capital. They would thereby qualify to purchase power and obtain priority for future investment at the site Kosovo C, and the funds would automatically be channeled into new programs. The electric power organizations from Croatia, Vojvodina and Macedonia have shown a willingness for such arrangements. Certain other details would have to be agreed on first. For example, according to the plan of the Kosovo Electric Power Industry, the first unit of the new Kosovo B power plant would go on line in 1994, the second in 1999, and the interested electric power industries want the second unit to be completed earlier.

All the business preparations will be done by the Kosovo Electric Power Industry (previously a separate work organization formed jointly for those preparations was envisaged), and each electric power organization will conclude self-management accords separately with the Kosovo Electric Power Industry. At the same time a separate study is to be made of the bases for regulating socioeconomic relations in joint construction of electric power facilities and coal mines.

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